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NEW YEAR'S GIFT

FOR THE

MEDICAL PROFESSION.

DR. CARPENTER

AND THE

ANTIPHRENOLOGICAL PHYSIOLOGISTS;

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THE

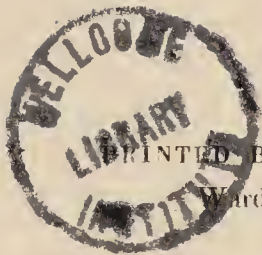
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DR. CARPENTER

AND THE

ANTIPHRENOLOGICAL PHYSIOLOGISTS.

“A verye folisshe man maye wryte a boke,
Aye, and a greate boke too, syth Ignoraunce
Affecteth oft more wordes than wysdome doth,
To hyde her ignoraunce, and sprede out her leynynge.”

THERE is no more prevalent error at the present day committed by the simple-minded public, who have never been behind the scenes and had a peep at the *machinery* of authorship, than that of accepting the fact of a man's name being appended to a “greate boke” as a credential of wisdom. The circumstance pretty surely indicates that the individual possesses a laudable amount of industry and application, and affords a strong presumption of the existence of a passably good opinion of self, combined with a considerable desire of distinction and sufficient command of language to render the process of composition easy; but as to its affording any guarantee of the possession of that soundness of judgment which would entitle the writer to be regarded as an authority, nothing can be further from the fact. We defy any one to shew that the circumstance of an individual assuming the office of guiding the public mind affords the slightest evidence of his being well qualified for the post. Often men of genius, the discoverers and inventors of their age, from a deficiency in language, abominate the drudgery of authorship and can with difficulty be induced to narrate the history of their own achievements; whilst, on the other hand, the most barren intellectual soils, as far as self-production is concerned, compose with such facility that they adopt the manufacture of books as a means of livelihood.

It is by this latter class that the community is inundated by a deluge of works which may be searched through and through, and searched in vain, for a new idea. There are,

however, no ideas so stale and hackneyed as not to meet with a class of the public whose ignorance keeps pace with these qualities, whilst a still larger class are so entirely satisfied, provided their ears are tickled with a flow of loud-sounding, well-balanced, nicely-rounded periods, as to require nothing beyond,—and by such parties these productions are regarded as revelations, and their authors, as gifted with a measure of inspiration proportionate to the size of their volumes. The man of observation and profound reflection, the student of nature, who gives to the world the result of his labours in some unpretending brochure, every line of which is *suggestive*, whilst every page enshrines a new idea, passes for nobody ; whilst the literary joiner, who pilfers one of his ideas, works it up into a quarto and sends it forth to the world disguised in a court dress, becomes at once a great authority ; and although to value ideas according to the size of the volume that contains them is every whit as absurd as valuing a book by its binding or a picture by its frame, such a mode of appreciation does nevertheless prevail with the ignorant and superficial.

In making these remarks, nothing can be further from my intention than to disparage in any way the labours of that useful class whose vocation it is to popularize and disseminate knowledge. No man I think can be more laudably employed ; but I do emphatically protest against the authorship of even voluminous writings being regarded as a credential of wisdom and elevating an individual into an authority. A retailer of knowledge *may* be, and often *is*, a very able man, but he is not *necessarily* so. He *may* deserve to rank as a high authority, but if so it must be in right of his own discoveries and original reflections, and not by virtue of his office. In matters of science, the way to test what a man really is, and what he has achieved, is, to ask the question, whether, supposing he had never lived, any science would have had the development of its principles retarded in consequence. Tried by this test many gigantic mushrooms, which occupy by far too much space at present, would suffer a woeful curtailment of their dimensions and dwindle into insignificance. Let the great distinction between those who write to communicate their own ideas, and those who merely assume the pen to narrate the observations, discoveries, ideas, and sentiments of others, never be lost sight of. To confound the *mere writer* with the man of genius who originates, would be as absurd as to class the caster of plaster images with the great sculptor whose immortal inspirations he copies and vends.

The preceding reflections have been excited by contem-

plating the oft-recurring spectacle of cerebral physiology being assailed by a *reputation*. On such occasions we hear it loudly shouted on all sides that Tiedemann, or Müller, or Dr. Carpenter, “has upset phrenology;” but if one should listen to endeavour to catch what the *arguments* are, only an inarticulate babbling is audible. Shortly after the publication of Dr. Baly’s Translation of *Müller’s Physiology*, I remember asking several who seemed to be exceedingly well informed as to the fact of the work containing what they termed a refutation of phrenology, in what the argument consisted, but, I asked in vain. With the majority who take their opinions on trust, the name of the authority is the all-important point. Satisfied on this head, the possessors of this indolent creed deem any further examination of the ground of judgment superfluous. It is to the author, not the merits of his case they bow themselves,—to the man, and not his arguments, their reason yields her allegiance. Unsuccessful in my attempt to learn in what Müller’s attack consisted, from those who nevertheless congratulated themselves on being supported by it in their antiphrenological tendencies, I resorted to the book itself, and was rewarded by a rare illustration of the dense dulness with which great erudition may be associated.

The enduring nature of the hostility which phrenology has encountered from anatomists and physiologists has sometimes excited my surprise. It might have been supposed that when the first crop of antagonism excited by the jealousy of contemporaries began to fade, all would have united to reverence the memory of a philosopher whose discoveries reflected such an honour on the profession to which he belonged. Instead of this, however, their hostility seems to have become hereditary, and warfare against the disciples of Gall to be regarded as good service against a common enemy. One circumstance that has perhaps perpetuated this feeling has been the difficulty experienced in passing from their old methods of mangling the brain, as an apology for dissection, to the new method of Gall. In the eyes of a pupil who had been accustomed to see it cut up slice by slice like a round of beef, the exposure of previous ignorance involved in a correct demonstration of its fibres, must certainly have been most complete, and not a little unpalatable to the self-love of the egotistic and narrow minded.

Dr. Carpenter, to judge from his writings, was so unfortunate as to imbibe from some of his teachers their prepossessions against phrenology,^h which prepossessions after sundry

^h We know for a positive fact that Dr. Carpenter, when first a student, and

buddings have at length borne fruit in the shape of an article in the *British and Foreign Medical Review* on Mr. Noble's work, *The Brain and its Physiology*. After the critical remarks with which I have prefaced my observations, Dr. Carpenter will have no reason to complain of my not admitting him to be an authority; meaning by this term, an individual whose previous achievements have shewn him to be possessed of that profound penetrating and sagacious mind, which takes the correct view of every question presented to it, and whose decision can safely be regarded by others as indicating on which side the balance of probabilities lies.

I wish to avoid all personality as far as is consistent with the task I have undertaken, but, the position of Dr. Carpenter, as the oracle of Dr. Forbes in the *British and Foreign Medical Review*, together with the tone of assumption and authority he adopts, make it incumbent upon me to examine how far these pretensions are well founded. In my opinion, whatever laurels he may have acquired hitherto, have been in the fields of scientific literature as an historian, and not as an original discoverer or profound critic; and on those occasions, where he has quitted the office of narrator to bring forward some doctrine or speculation peculiar to himself, he has rather diminished than added to his reputation. All must admit his praiseworthy industry and application, for no one will think of denying these qualities to an individual who sits down to write an Encyclopædia single-handed, and I am equally ready to concede to him the possession of a considerable amount of literary talent; for though he can boast of no graces of style, and the structure of his sentences is often inaccurate, these defects are counterbalanced by a happy facility in communicating his ideas to his readers, which generally renders his meaning clear and unmistakable, when his own conceptions are definite and distinct.

Possibly I may be but imperfectly acquainted with Dr. Carpenter's career, but in my mind his name principally stands associated with,—

1st. A critique in the *British and Foreign Medical Review*, in which he opposed certain portions of Dr. Marshall Hall's doctrines on the reflex functions, and took a view of the question he was subsequently obliged to retract.

2ndly. With the maintenance of the position that the stimulus of the blood is alone sufficient to produce the heart's action;—since also retracted.

before he was in possession of sufficient knowledge to enable him to form a correct judgment, stated to a professor at University College, that phrenology was in his opinion untrue.—*Zoist*.

3rdly. With the doctrine that no nervous system exists in vegetables ; concerning which, I shall merely observe that when I see trees project their roots in a right line across 12 or 14 feet of barren space to the nearest point at which a congenial soil may be found—that poisons which act on the nervous system of animals are equally deadly to plants,—and lastly, consider the motions of the sensitive plant so identical with reflex action in animals—I think that the argument from analogy in favour of the existence of a nervous system in vegetables, greatly preponderates over the mere negative evidence afforded by the fact that none has been yet discovered.

4thly. With certain doctrines as to the functions of the cerebral ganglia ; the unphilosophical character of which I trust satisfactorily to demonstrate in the present article.

If Dr. Carpenter can lay claim to any important discovery in physiology, or any other achievement which can entitle him to assume the tone of superiority and authority he indulges in, (particularly towards that benighted class, the phrenological physiologists,) I must certainly plead my entire ignorance of them.

I believe it often occurs that phrenologists, at the sight of the propositions of their opponents, are so struck with their absurdity as to deem any serious refutation superfluous, and to conclude it to be impossible that they should ever command the assent of any besides their authors. Such I freely confess were my feelings the first time I encountered Dr. Carpenter's suggestions as to the emotions being seated in the cerebral ganglia. I regarded them much in the same light, and equally as gratuitous and improbable, as I should the speculations of an individual who should propound the theory, that when a joint of meat is placed before the fire, the cooking is effected not by the heat, but by some other simple element disengaged by combustion, which had hitherto escaped notice ; and, having first *premised* that this element was always evolved in the same ratio as heat, should next proceed to support his theory by stating that this was strictly in harmony with, and afforded a beautiful explanation of, the fact that cooking is accelerated or retarded as the quantity of heat is increased or diminished. Equally flimsy and unsubstantial with the preceding is the circular mode of argument adopted by Dr. Carpenter to impart an air of plausibility to his chimerical notions. Lest, however, any simple minded individuals who labour under the delusion, that the oracle of Dr. Forbes and the *British and Foreign Medical Review* must necessarily be an authority, should suffer themselves to be

misled by them, I have been requested to offer some observations in reply, a task I can scarcely flatter myself of being able to fulfil without taxing the patience of my readers.

Phrenologists having, by innumerable observations of the relationship between size and function, established on a basis as incontrovertible as that of any fact in natural history, the dependence of certain instincts or feelings upon certain portions of the brain, (say, for example, of Love of Offspring, Attachment, and tendency to fight upon certain portions of the posterior lobe,) Dr. Carpenter acting precisely as if such observations had never been made, and without bringing forward any counter observations of his own, locates these feelings in the optic thalamus. It might be supposed that this edict was intended to be a death blow to phrenology. Not so, however : Dr. Carpenter not only grants it the right to live, but even undertakes the office of reconciling it with his own system ; a task he achieves entirely to his own satisfaction byⁱ splitting each emotion into two parts, one of which he assigns to the thalamus, whilst he bestows the other on the brain-proper. Dr. Carpenter maintains,

“That the offices of the cerebrum are restricted to *intellectual*^k operations,” and observes, “the first and chief point of collision between these views and the ordinary phrenological system, is that which relates to the localization of the passions, emotions, &c., but it would not we think be found difficult to reconcile the two, so far as this question is concerned. For it may freely be admitted, that there *are* such classes of ideas as those grouped together under the terms Benevolence, Combativeness, Philoprogenitiveness, or Destructiveness ; although the pleasure attending the act of entertaining them, which causes them to be habitually kept before the view of the mind, and thus gives them the character of propensities, be not seated in the cerebrum but elsewhere. Now *if we find reason to adopt the phrenological system as a whole*, the only modification it would require, would be to regard the different divisions of the cerebrum, commonly termed *organs*, in the light of *instruments for the formation of the several classes of ideas*, instead of being the instruments of the emotions or propensities taken as a whole into which these ideas so largely enter.” . . . “We have no *à priori* objection to make to the doctrine that these different classes of ideas may be formed by the special instrumentality of the cerebrum. We

ⁱ His words are, “That the tendency to the recurrence of a certain class of ideas, constantly connected with feelings of pleasure or pain, constitutes what is known as an emotion, desire, or propensity ; and that this is composite in its nature, involving the cerebrum for the formation of the ideas, and the sensory ganglia for the feelings with which they are associated.”

^k It is to be regretted that Dr. Carpenter has not defined the meaning of intellectual, according to his ideas.

freely admit too that there is a general correspondence between certain forms of the cerebrum, arising from the relative development of its different portions, and certain leading diversities of character which might not unfairly be regarded as indicating that these several divisions are the special instruments of particular groups of intellectual or moral faculties."

Dr. Carpenter, whom I have allowed, and shall allow as much as possible to speak for himself, to avoid the possibility of my misstating his views, observes :

"The rudiment of the cerebrum which exists in fishes, and which is still more developed in reptiles and birds, is the representative of the anterior lobe alone of the human brain; the middle lobe being first developed in the lower mammalia ; and the posterior being not merely restricted to the higher, but being more developed in man relatively to the remainder of the mass, than it is in any other animal. Now, as upon the usual phrenological allocation, the lower or animal propensities are situated in the posterior lobe, their instrument would seem altogether undeveloped in the beings in which they apparently possess the greatest force; whilst they attain their most complete evolution in that species which is distinguished by his power of keeping them in subjection."

After placing phrenologists in this difficulty, Dr. Carpenter proceeds to offer them what he terms "a feasible method of extricating themselves from this very awkward dilemma, without abandoning any of their fundamental positions," as follows :

"We are not always to regard those *actions* of the lower animals which correspond with our own as indications of the existence of *propensities* in them, corresponding to those from which they emanate in ourselves; these propensities being in fact the states intervening between the exciting sensations and the resulting will, and being compounded of ideas and feelings. Now in beings which are altogether destitute of a cerebrum, the actions supposed to proceed from the animal propensities must be really consensual in their nature; and it may be questioned whether they do not remain so in those vertebrata which have no posterior lobe to their cerebrum; the propensities, that is, the *ideas* of the objects to which they relate, and the *feelings* connected with the mental consciousness or contemplation of them, being really restricted to the higher mammalia, in which they are designed to work upon the intellectual powers and the will to contrive the means for their gratification. On this hypothesis *we should expect to find the posterior lobe attaining by far its highest development in man, since in the well-regulated mind the animal tendencies never act otherwise than through the reason and will, that is, in the form of true propensities.*"

What *are*, I should like to know, "those *fundamental principles* without abandoning which, phrenology may be ex-

tricated from the awkward dilemma," in which (according to Dr. Carpenter) she is placed, by fraternizing with his visionary ideas? Can a science which owes its development to the observation that, in the same degree that particular parts of the brain preponderate in size, certain feelings predominate in energy, till, as the ratio increases, they become ungovernable instincts over which the usual restraints of reason and prudence are powerless; ally itself with the doctrine that the higher the development of the posterior lobe, the better regulated the mind, and the more subservient the animal tendencies, to reason and the will? Can a system be supported by a supposition which requires all the inferences on which it was originally reared to have been fallacious, and the doctrines of which it still essentially consists, to be the converse of truth?

Thus then phrenology after being first slain, and then resuscitated by Dr. Carpenter, turns out at last to be the doctrine, that the larger the posterior portion of the brain the more completely will the instincts and propensities be under the guidance and control of reason, and *vice versâ*!!! Oh! shade of the immortal Gall, how profound are your obligations to your new disciple!

What the precise development of Dr. Carpenter's posterior lobe may be, I will not undertake to aver, but certainly he affords a rare specimen of that literary Philoprogenitiveness, which is so smitten with the graces and perfections of its own bantling, as to overlook the most glaring inconsistencies and defects. Never have I before seen an individual so completely ran away with by an hypothesis, and ideas so altogether incongruous and incompatible, so contradictory and self-destructive, gravely brought forward in its support with the utmost simplicity and good faith.

So far as Dr. Carpenter possesses clear ideas himself, I find that he is generally very happy in conveying a clear conception of them to the minds of his readers. There is however one most important point connected with the present discussion in which he has so altogether failed to do this—which he has so altogether *slurred* over without attempting its elucidation, that the conviction is forcibly impressed upon me, that it is one on which he himself possesses *no clear ideas*. Dr. Carpenter informs us that an emotion "is composite in its nature, involving the cerebrum for the formation of the ideas, and the sensory ganglia for the feelings with which they are associated;" and also that "there are such classes of ideas as those grouped together under the terms Benevolence, Combativity, Philoprogenitiveness, or Destructive-

ness," but he altogether omits to enlighten us as to in what such classes of ideas consist, apart from their emotional sensations.

By a class of benevolent ideas, I presume Dr. Carpenter means the ideas connected with a benevolent act or intention; but take away from such ideas the *specific emotional sensation*, and what remains besides certain attributes of time, place, form, size, weight, number, &c., for which we have special intellectual faculties? Nothing else remains—and therefore the sensation being already declared to reside in the thalamus—no alternative is left but to conclude that Dr. Carpenter's doctrine is, that, the various circumstances of time, place, form, size, &c., connected with a benevolent act are cognized by the organ of Benevolence, those connected with fighting by Combativeness, those relating to a nursery by Philoprogenitiveness, and those pertaining to a murder by Destructiveness, &c. A notion which, however it may *harmonize* with his declaration that "the offices of the cerebrum are restricted to intellectual operations," involves a perfect chaos of absurdities.

What a very short distance will common sense carry a man in the paths of science! The illiterate, who can boast of no "stores of knowledge acquired by modes of investigation totally neglected by the professed followers of Gall and Spurzheim," allowing themselves to be led by this guide, have ignorantly concluded that objects and events relating to totally different instincts, nevertheless possessed such a great similarity, or rather identity, in all the simple attributes or specific qualities of which they consisted, as to come under the cognizance of the same intellectual faculties. The correction of this radical error science owes to Dr. Carpenter, and henceforth we must never be guilty of the *bêtise* of supposing that the same organ is sufficient to appreciate the form of a sword, carving knife, and scalpel, or, the size of a phial of poison, a bottle of wine, or an anodyne draught, these various objects being respectively the peculiar property of Destructiveness, Alimentiveness, and Benevolence. I have heard it asserted that a living sheep had two more legs than a dead one; may not the fact derive some explanation from the views of Dr. Carpenter, according to whom ideas of the dead animal would be conceived by the organ of Alimentiveness, whilst those of a living one, would have their seat in Acquisitiveness, or Individuality, according as the creature formed the subject of the contemplations of a grazier or zoologist.

It might be supposed from the extreme lengths Dr. Carpenter seems ready to go in defence of his hypothesis, that

he was prepared with some very cogent and powerful reasons in its confirmation, instead of which, he appears to be able to adduce in its support nothing but arguments of the most lame and impotent description. The following seems to have been the mode in which he was led to its adoption.

The nerves of common sensation being in want of a ganglion, and the optic thalamus being in want of a function, he forthwith resolved to consummate a union between the two. This first step accomplished, the next was to infer that as sensations of pleasure and pain were seated in the thalamus, and as the emotions were attended with pleasurable or painful feelings, *ergo*, the thalamus was the seat of the emotions. This doctrine being at variance with phrenology, with the possible truth of which he seems to be unpleasantly haunted, an attempt was made to reconcile the two by splitting the emotions, (as before described) and allotting a portion to each.

The mode of argument adopted by Dr. C. to arrive at the conclusion that emotions being attended with pleasurable or painful feelings must be seated in the great ganglion of the sensory nerves, is one of the most unique specimens of superficiality I have ever met with, and quite a psychological curiosity.

“All the propensities, emotions and moral feelings, between which and the intellectual operations phrenologists would establish such a marked distinction” may he says be “analyzed.” “What is benevolence for example, but pleasure in the contemplation of the happiness of others? What is the whole class of selfish propensities, on the other hand, but the feeling of pleasure in the entertaining of various ideas connected with self? What is combativeness but the pleasure of setting one’s self in antagonism with others? Or what is veneration but the pleasure of contemplating rank or perfections superior to our own?”

Oh! this method of *analysis*!ⁱ What is taking snuff, for example, but the *pleasure* of tickling the nose? What is eating but the *pleasure* of filling the belly? What is a doctor but a short eared *animal* labelled M.D.? or, What is an ass but a thick skinned *animal* with long ears? What is an *animal* but a *lump of flesh and blood*? and what is a lump of flesh and blood but an *aggregation of matter*. Can anything be more *simple*? Oh! new and sublime system of philosophy! every step in which is the abandonment of some

ⁱ Analysis, a term once used to express the separation of a compound into its elementary parts, but now employed to designate the process of obliterating all distinctive peculiarities under a generic term.

miserable petty detail of knowledge, a stride towards the attainment of the absolute and universal.^j Alas! that men should waste so much time and labour under the absurd delusion that in proportion as they establish specific differences between objects, their knowledge becomes increased! But let us attend again to our instructor.

“Attachment and dislike, affection and rage, joy and sorrow, and many other simple and elementary feelings, are but *modifications* or *phases* of pleasure and pain which receive their different designations according to the character of the objects which excite them, the ideas which they arouse and the mode in which they are manifested.”

Let me try my hand at a parody.—Taste and hearing, sight and smell, touch and resistance, pleasure and pain, and many other simple and elementary feelings, are but *modifications* or *phases* of sensation, which receive their different designations according to the character of the objects which excite them, the ideas which they arouse, and the mode in which they are manifested!—and of course in Dr. C.’s estimation no more entitled to distinct nervous apparatuses for their manifestation, than Benevolence, Combativeness, or Philoprogenitiveness.

Like the dog who mistook the shadow for the substance, mankind have ever deluded themselves by mistaking words for things. Three-fourths of the errors and disputes which have occupied them have had no deeper origin than verbal distinctions, which a definition would have strangled at birth. The use of general terms in a loose and indefinite manner has ever been one of the most fruitful sources of these controversies, and in the present instance it would appear as if Dr. C. believed that the circumstance of the same generic name, being capable of being applied to a class of objects, established their identity.

To enter into a serious refutation of the doctrine that emotions of pride and vanity, compassion and reverence, wonder and admiration, &c., are but “*modifications or phases*” of physical sensation, would be absurd. Irony and ridicule are the only appropriate weapons for encountering an extravagance from which, if an individual’s own consciousness is not able to preserve him, nothing else can. Let an artist try the experiment whether all that is requisite to depict the natural language of the varied emotions be to place his figures in attitudes indicating different modifications of physical pleasure or pain, and see what the public will say to the result.

^j *Qy.* A stride towards the attainment of absolute and universal ignorance.—*Printer’s Devil.*

In short, so extraordinary appears to me the illusion, that I should be almost ready to query whether Dr. C. could belong to the genus *homo*, had not previous experience convinced me, that there are some individuals who, from a deficiency in the development of a portion of brain lying between Eventuality and Comparison, are almost totally unable to hold their own consciousness before their minds as an object of contemplation. Such persons are incapacitated by nature for elucidating questions bearing on the metaphysics of the mind; yet in this, as in other analogous cases, it often happens oddly enough, that the parties themselves labour under the strange delusion of believing, that the particular pursuit for which they are disqualified constitutes their peculiar forte. Thus Dr. Carpenter says, “on this last point” (that is “the mixed character of the emotions and propensities, as compounded of *ideas* and the *simple feelings* of pleasure and pain”),

“We venture to think that we have made a real advance in psychology, which will prove to be important; and we happen to know that several intelligent psychologists are well prepared to receive it, as fixing and defining views which had been previously floating in their own minds. It seems indeed to have been glimpsed at by the late Mr. James Mill in his valuable *Analysis of the Human Mind*, his deficiency consisting in connecting the feeling too much with the sensation, rather than with the intellectual idea.”

I should certainly like to know *who* the intelligent psychologists *are*, who have been waiting for the advent of this extraordinary doctrine, which, only dimly revealed to Mr. Mill, has been manifested to Dr. Carpenter in all the brightness necessarily pertaining to so luminous a conception.

The work of Mr. James Mill, lauded so highly by Dr. Carpenter, who has adopted his views, is greatly inferior in its analysis of mental phenomena to those of Lord Kames and Dr. Thomas Brown. According to Mr. Mill mankind seek wealth, power, dignity, only for the sake of the command which these give them over their fellow-creatures,—whose services may thus be made a means of procuring *pleasure*. On this theory we must suppose, that an unknown criminal, who dresses himself as a dandy for the scaffold, and with his last accents labours to convince the spectators of his innocence, does so from having come to the conclusion after much debate, that it may possibly induce the executioner to adjust the rope round his neck somewhat more tenderly.

Mr. Mill, in conformity with his doctrine,—that all mankind’s tendencies are merely modes of manifestation of

a selfish desire for pleasure, proceeds to *manufacture* parental affection as follows. "A facility of associating the ideas of *his own* pains and pleasures with those of the child"—"the looking upon his child as a cause *to him* of future pains or pleasures, much more certain than any other person." . . . "Man becomes fond of that on which *he* bestows benefits." . . . Oh! ye ignorant vulgar, bow your heads with humility before the profound wisdom of philosophy, and learn for the future that when a man blest with an appetite sits down and makes a good dinner, he eats—because from early youth he has associated this operation with the time of day—from sympathy with those around—in order to keep up his strength—from in short anything you please except a simple instinct to take food.

"The *pleasurable associations*," Mr. Mill informs us, are sometimes carried to such a height as to afford an exemplification of that *remarkable* state of mind in which a *greater value is set upon the means than upon the end*, and persons have been found the one of whom could not endure to live without the other." A mere error in calculation—man being transformed from a creature of impulse into a sort of calculating machine, constantly occupied in solving the problem how the greatest amount of pleasure is procurable—it is quite in keeping, to suppose he should occasionally produce a wrong result.

Speculations of this kind can only be regarded in the light of aberrations of the human mind, and as indicating that the science to which they relate, was, at the epoch which gave birth to them, still in that stage of barbarism which always precedes the application of the inductive mode of cultivation, and the consequent rectification of *à priori* notions by a rigorous comparison with facts.^k Searching for final

^k The following mode of argument made use of about two centuries ago, when chemistry was equally as undeserving the name of positive science, and as purely speculative as metaphysics at the era of Mr. Mill's publication, was employed by a writer of that period to account for chemical affinity, and is at the present day quite a curiosity. "The reason hereof is the resemblance and sympathy they have one with the other. If I should not explicate wherein this resemblance consisted, I should expose myself to the same censure and blame as that which I taxed at the beginning of my discourse, touching those who speak but lightly and vulgarly of the powder of sympathy, and such marvails of nature. . . . The first resemblance shall be touching *weight*, whereby bodies of the same degree of heaviness do assemble together, and keep company together in *æquilibrio*, &c. . . . The second resemblance of bodies which draw one another and unite, is among them which are of the same degree of *rarity and density*, the nature and effect of *quantity*, being to reduce to unity all things which it finds, &c. . . . The third resemblance of bodies which unite and keep themselves strongly together is that of figure," &c., &c., &c.

causes, which were unnecessary, superfluous, and beyond their reach, has ever been the favourite occupation of metaphysicians. Nature being too simple to content them, they have exercised their ingenuity in the construction of a piece of machinery. But what avails a system of wheels and pulleys, racks and pinions, which still requires a *moving power* to put it in action?

To endeavour to give reasons *why* parental attachment and benevolence should be felt, is equally as ridiculous an employment as the conjecturing of causes for gravitation. As in the one case, so in the other; man's vocation is restricted to studying the laws of phenomena, and ascertaining the conditions under which they take place. "*Homo, naturæ minister et interpres, tantum facit et intelligit quantum de naturæ ordine re vel mente observaverit; nec amplius scit, aut potest.*" All we can ever know about the matter, or all we require to know, is comprized in the fact, that certain sensations are excited by certain objects, according to "*laws written upon the nervous pulp.*"

Why the sensations are such as they are, or why they are not different, is a question as inappropriate as the query, why we are not inhabitants of Jupiter. We have first a class of external organs (the senses), in which sensations are excited by certain sensible properties of matter; secondly, a class of internal organs, in which sensations (perceptions^k) are excited by impressions transmitted by the preceding; thirdly, a class of internal organs, in which sensations (conceptions or ideas^k) are excited by sensations derived from the second and fourth; fourthly, a class of internal organs, in which sensations (emotions) are excited by impressions from the ideas conceived by the third class.¹ An organ may be considered, 1st, in relation to *the objects* which excite it to action; 2ndly, in relation to the *sensation* which co-exists with its activity; and 3rdly, in relation to the *acts* to which it prompts. The sensation cannot be defined, but must be felt; and no creature destitute of an organ can ever attain to a knowledge of the sensation it produces.

In the case of Benevolence, the *object* which excites it to action is the pleasure or pain of other sentient beings. Whenever this idea, which is one of the clearest we possess, is pre-

^k In consequence of the vague and undefined notions which have hitherto prevailed in this department of science, our language is not yet provided with words, the use of which being restricted to *one* class of sensations, define that class *exclusively*.

¹ More distinctions might be drawn, but not being essential to my argument, I content myself with the foregoing.

sented to it by the intellect, the organ, by the "law written on its nervous pulp," becomes active, and with this action is conjoined a specific sensation, pleasurable or the reverse, according as the idea conceived by the intellect relates to enjoyment or suffering. Nothing can be more erroneous than the notion that the *desire* which ensues—so to *act* as to prolong or heighten the enjoyment of others, and remove or lessen their suffering, (and which constitutes the true *function* of the organ in the same way as a reflex *action* constitutes the function of the spinal cord), is *produced* by the *consideration* that the former will heighten the pleasurable emotion experienced by self, and the latter remove the painful one.

Even the most selfish men perform occasionally a kind action, to which they are not prompted either by the view of present pleasure or future advantage; and though as men are at present constituted (with the basilar region of the brain greatly preponderating in size over the coronal), the selfish feelings have a great preponderance over the philanthropic, nothing is easier than to conceive a race of beings with the proportions of these parts of the encephalon reversed, and the relative strength of the two classes of feelings reversed in accordance. The metaphysicians of such a people, if they allowed themselves to be guided by considerations analogous to those which have blinded ours, would assert that man took care of himself not from a simple *selfish* instinct, but from the benevolent consideration that if evil befel him the circumstance might occasion pain to others.

Dr. Carpenter expatiates largely on the value of comparative anatomy, and the comprehensive and profound views of the nervous functions to be obtained by its study. In his opinion it is an infallible guide by which results obtained by other methods of investigation are to be tested and valued, and to the authority of which all other modes of research, and particularly the limited one of comparing size with energy of function in a single class, must succumb. Dr. Carpenter can pass no eulogium on comparative anatomy in which I am not ready to concur, for no one is more impressed with the uniformity which reigns amidst the diversity of nature—the profound analogies which pervade every department of her works. I cannot however acquiesce in assigning that *exclusive* authority to comparative anatomy which he does, and still less to the *comparative anatomy of the present day*. In my view, as every fact in science must harmonize with every other, certain knowledge acquired by the comparison of energy with size in a single class, may quite as legitimately be used to check the inferences of comparative anatomists, as the

established principles of their science may safely be employed to rectify notions too hastily adopted from observations based on the former method of research. As Dr. Carpenter complains of phrenologists discarding the authority of comparative anatomy when it interferes with their doctrines, so I complain of his discarding their doctrines where they are opposed by the dicta of comparative anatomists. The whole question resolves itself into one of balance of evidence, and where it appears to me to be all on one side, Dr. Carpenter gives the preference to the opposite scale.

Did we possess a *perfect* system of comparative anatomy, and a *perfect* system of the psychology of the lower orders of animated beings, we should have ready to our hands a mass of materials from which a stable physiology of the nervous system of animal life might be easily constructed. Nothing however can be more narrow and limited than our information on these particulars. Of comparative psychology our utmost knowledge amounts to little more than vague conjectures founded on the uncertain basis of analogical inferences from our own consciousness; and as to comparative anatomy, every successive writer on the subject overturns propositions stated as facts by his predecessor. If the nervous fibres could be as readily and surely traced and identified as the threads in a mass of tangled silk made up of skeins of different colours, then Dr. Carpenter's implicit reliance on the assertions of comparative anatomists would be much more rational. Is it not however notorious, that as a general rule every writer on an organ gives an anatomy which agrees with his own theories as to its function? Have we not at the present day half a dozen different anatomies of such a prominent subject for investigation as the spinal cord? "Of the portions of the roots which are continuous with the fibrous columns," it is stated by Sir C. Bell "that the anterior fasciculi pass to the anterior columns only, and that the posterior are restricted to the lateral columns. On the other hand, Mr. Grainger and Mr. Swan maintain that both sets are connected with the lateral columns only; the anterior and posterior lateral fissures definitely limiting the two roots. Perhaps both these statements are rather too exclusive. The anterior roots would seem to have a connection with both the anterior and lateral columns; and the posterior cannot be said to be restricted to the lateral column, some of their fibres entering the posterior division of the cord." (*Carpenter's Physiology*, p. 127.) Nothing certainly can be cooler than the mode in which Dr. C. disposes of the authority of Mr. Grainger and Mr. Swan: he does not say my *dissections* have led me to a

different conclusion, but simply, "the anterior root would seem to have a connection," &c.; which means (being interpreted) *my* physiological notions require such an anatomical connection. It is only phrenologists then, it appears, who are expected to bow submissively before the dicta of anatomists, and abjure their principles the moment they clash with the former. Dr. C. possesses the privilege of exemption from the rule he imposes on others.

Serres seems to be a favourite authority with Dr. Carpenter, and he would doubtless deem a statement of his quite sufficient to knock down a phrenological theory. Literary anatomists and physiologists however are quite at the mercy of the authorities they consult, and having no other means of judgment, are decided by the plausible tone of assumption and confidence which some know so well how to assume.

To enable my readers to judge of the very little reliance which can be placed on even the positive statements of physiological writers, especially the antiphrenological ones, I here annex a few of the anatomical blunders of Serres,^m noticed and refuted by Gall, and now universally exploded.

"That the functions of the white and grey nervous substances were convertible, either being capable of performing all the functions of a nervous system.

"That in the invertebral animals there is no grey matter, and that their nervous system is formed exclusively of white substance.

"That the spinal marrow presented no swellings formed by the grey matter at the insertions of the spinal nerves.

"That the external root of the olfactory nerve is inserted by one of its bundles in the outer rays of the anterior commissure.

"That the olfactory nerves and fifth pair increase in volume as that of the brain decreases.

"That the spinal marrow and the corpora quadrigemina are so rigorously developed in the ratio of each other, that the size of the first being given in any class or in any of its families, the volume of the latter may be determined with precision.

"That in all classes except that of reptiles the median lobe of the cerebellum is developed in the direct ratio of the quadrigeminal bodies.

"That the mole has no optic nerve.

^m Un des ouvrages qui aurait dû fixer le plus l'attention des anatomistes, puisqu'il avait pour lui l'avantage d'avoir été couronné par l'Institut de France, celui de M. Serres, est de tous ceux qui ont été publiés sur ce sujet, celui qui nous paraît devoir inspirer le moins de confiance. L'anatomiste qui a étudié le système nerveux cérébral sur la nature, ne sait, en lisant cet ouvrage, de qui il doit le plus s'étonner, ou de l'assurance de l'auteur dans sa manière de présenter les faits anatomiques servant de base à ses propositions, ou de la fausseté de ces mêmes propositions rapprochées de la nature ou des dessins donnés par l'auteur lui-même. *Traité de Phrénologie Humaine et Comparée.* Par J. Vimont, p. 100.

“That the *corpus callosum* is proportionate to the annular protuberance.”

If the antiphrenological physiologists could but light upon such a batch of blunders made by a phrenologist, how they would regale themselves; what a crowing of exultation and trumpeting forth of triumph would be heard on all sides. After the preceding sample of the degree of dependance to be placed upon the statements of an authority (?)—statements made too, it must be remembered, not casually nor hastily, but deliberately put forth in opposition to those of Gall, and professedly founded on personal observation, my readers will be better prepared to judge of the weight that should be attached to the assertion of Dr. Carpenter founded on the statements of Tiedemann and Retzius, that the cerebrum of the bird is the representative of the anterior lobe alone of the human brain; that the middle lobe is first developed in the lower mammalia, and the posterior lobe restricted to the higher. Statements of this extraordinary character put forth from time to time most conclusively demonstrate that something beyond good eyesight is required to see correctly in anatomy, *and that no amount of carefulness in observation constitutes an individual an authority in matters of inference.*

Such is the deluding influence of words, that probably if this portion of the brain had been denominated the lobe of the social instincts, and the term posterior never connected with it, the present controversy would never have arisen. In my opinion, there never was a more rash and presumptuous assertion made than the preceding, nor one which betrayed a greater amount of superficiality and ignorance on the part of its authors. Dr. Carpenter, after a sneer at “*phrenological luminaries*,” goes on to observe, “Now although there is no external line of separation between the middle and posterior lobes, such as exists between the anterior and middle, there are two points of internal structure which afford as definite an indication as can be required: these are, the development of the posterior cornua of the lateral ventricles, and the situation of the hippocampus major.”

Let us examine the amount of wisdom displayed by the *physiological luminary*. Granting, for the sake of argument, what (since the posterior lobes may extend more or less forward laterally) I cannot admit, viz., that the posterior cornua indicate their inferior boundary, how is it possible that Dr. C. can predicate their size, unless he be able (which he does not even pretend to be) to determine likewise their superior boundary? Since when, has it been possible to ascertain the

size of a structure by being acquainted with the position of one end of it? To make the excessive absurdity involved in Dr. Carpenter's assertion palpable and obvious to the reader most ignorant of anatomy, I will employ the following illustration. Suppose the hind-boot of a coach to be extended over the roof into the fore-boot; next suppose the cavity thus formed to be divided within into three compartments, no marks of such division being visible externally, his proposition, is, that all that is necessary to discover the size of the hindmost cavity, is, to measure how far it projects behind the body of the coach.

Now there is no doubt but that the posterior lobe in animals is carried further forward on the superior surface of the brain than in man, for the convolutions in which their brains first become most defective, are those seated in the central portion of the coronal region, and the absence of these occasions the anterior edge of the posterior lobe to be advanced further forward to supply the deficiency. Analogous results, but minor in degree, are presented in different individuals of the human race; the superior portion of the anterior lobe is often carried further backward, and the superior portion of the posterior lobe further forward, with reference to their respective basilar portions, from a similar cause. These are points, however, on which Dr. C. is no doubt profoundly ignorant.

The fact is that in the lower vertebrata the cerebral ganglia and organs of sense are placed in a right line with the spinal marrow, whereas, in man they are placed at right angles with it, and as we descend the animal scale, the change from a right angle to a straight line, is gradually effected by drawing the medulla oblongata and other cerebral ganglia gradually downwards and backwards. This is the whole mystery of the matter, and the reason why anatomists attending to size, form, and relative position, instead of anatomical connection and function, have fallen into this great error. Where the thalami optici and corpora striata, the ganglia of the cerebral lobes are, there will the lobes be also. A bird or quadruped with its intellectual organs in the poll, would be as great a monster as one with eyes in its tail,—in fact just a similar violation of the harmony of nature.

Dr. Carpenter, finding in the assertions of anatomists with regard to the absence of the middle and posterior lobes in the lower animals, countenance for his doctrine of the seat of the instincts, observes,

“Now the cerebrum of a bird is *not* like that of a mammal as a whole, but can be compared only to its anterior lobe; and it seems

absurd, therefore, to be looking there for the organs of Combative-ness, Philoprogenitiveness, or Secretiveness, which belong to the posterior and middle lobes. What then becomes of all such organs? We reply that it is much more easy to conceive of their having no existence in the bird's mind as propensities, the actions referred to them being simply consensual, than it is to suppose that the uniformity which we every where see in nature is so egregiously violated."

Egregiously violated indeed! if there be a shadow of truth in this doctrine, which, however easy to conceive, appears to me the most improbable of conceptions.

Having shewn the reliance or rather non-reliance to be placed on the assertions of anatomists with regard to the middle and posterior lobes in animals, I may safely leave the superstructure erected by Dr. Carpenter to fall with the foundation. Before I quit the subject, however, I must bring under his notice a personage in whom he will doubtless recognize a great authority, viz., the celebrated hen of Flourens, whose martyrology has formed such an inexhaustible storehouse of anti-phrenological arguments. If the ganglia could not bestow on this unfortunate hen sufficient instinct to preserve her own life, by eating when food was placed before her, is it probable they suffice for causing birds to fulfil all the duties of paternity?

I have a collection of between seventy and eighty casts of bird's brains which I have formed gradually during the last two years, and, after attentively examining them, I have come to the conclusion that they are more lobulated than the human brain, and that the right point of view to consider them in, is, as presenting an example of that *tendency* of the coalesced ganglia of the higher orders of animals to separate into distinct parts in the lower; forming in fact, in this respect, a link between mammalia and inferior classes. An anterior lobe is plainly discoverable in each, and when I see that this bears a relation to the intelligence of the birds, being strikingly larger for instance in the Corvidæ than in the Falconidæ, I can scarcely refrain from a smile at the assertions of the anatomists and the credulity of Dr. Carpenter.

In his eagerness to make the thalami and corpora striata the ganglia of the sensory nerves and the seat of the emotions, Dr. C. altogether overlooks the circumstance that their development always bears a ratio to that of the hemispheres, a circumstance decisive in my opinion of their function being not independent but mediate. Any opinions passed on their function, in the present state of our knowledge of the nervous system, can only be regarded in the light of conjectures, but as the conjectures of one individual, even when erroneous,

often serve to suggest a valuable idea to the brain of another, I shall make no apology for introducing a few speculations of my own, premising that I do so with a great distrust of their accuracy, and with the full assurance that some will prove unfounded, and others require much rectification.

I have never yet seen generally admitted what I believe to be a uniform and most important law,—viz., that each organ performs two offices, one relating to animal, the other to vegetative life. Thus, the animal function of the tongue, is taste; its vegetative, that of purveyor to the muscles of deglutition; its ganglia, the ganglion of the lingual branch of the fifth and the ganglion of the glosso-pharyngeal. The animal office of the pituitary membrane is smell; its vegetative, that of guardian of the portals of respiration; its ganglia, the olfactory, and the vesicular matter at the termination of that branch of the fifth pair distributed to it.

When we consider the facts which recent researches have revealed respecting the power resident in light, to which the term *actinism* is applied, we can be at no loss to conjecture a vegetative function for the eye, viz., that of assisting in the supply of this element needful for the various vital-chemical processes of organic life. The posterior pair of quadrigeminal bodies are not improbably the ganglia of the portion of the optic nerve devoted to this function, and whose peripheral organ must be regarded as the tunica choroidea, in the same way as the retina is the peripheral organ of the portion devoted to vision, and whose ganglion may be the anterior pair of quadrigeminal bodies. The large size of the optic tubercles in birds, whose covering, feathers, is scarcely permeable by light, and their small size in man whose skin is more accessible to its rays, and more highly organized than that of any other animal, are curious facts.

Nothing to my mind is more radically vicious in principle and unsound in theory, than the practice which has lately been adopted, and is now become universal, of designating the cerebral hemispheres a ganglion. Ganglions are central organs, and the cerebral hemispheres are peripheral. Ganglions have their vesicular matter in the centre, and their exterior composed of white fibres. The cerebral hemispheres have their vesicular matter on their surface, whilst their white fibres are interior. In short, I view the hemispheres as the analogues of the senses, and *not* as ganglia; the vesicular matter on their surface as analogous to the vesicular matter at the peripheral expansion of the nerves of special sense; and their white fibres as the analogues of the white fibres of the latter. The corpus striatum I conjecture to be the gan-

gion of the animal function of the hemispheres, those performed with consciousness; and the thalamus opticus, the ganglion of the vegetative, performed without consciousness; whilst I regard the corpus callosum not as a commissure, but as a decussation formed by the fibres from each hemisphere crossing to enter the ganglion of the opposite side.

The necessity of a most intimate connection between the functions of vegetative and animal life, by means of which the two can act and react upon each other, is most obvious. The principle on which it is founded seems to be, that the activity of every animal organ stimulates the action of those vegetative processes subservient to it,ⁿ or which minister to its wants, and thus contributes to the realization of its own desires; whilst the vegetative organs have the power of repressing the activity of animal ones when such activity would be prejudicial to their operations, and of stimulating them to action when their activity is necessary for the conservation of the species. Disease I conceive, except in the case of poison, arises from this system of mutual checks being out of order. It is probable that no portion of the cerebral hemispheres enters into action without discharging a portion of nervous fluid or vital electricity (of a specific character, varying with the locality of the surface which secretes it), which is *distributed* by the portion of the thalamus receiving it to the organ it represents; and that thus every emotion chronicles its existence in an effect on the organs of vegetative life. When the vesicular matter on the surface of the hemispheres acts with such intensity as to consume vital electricity faster than it is formed by the combustion of the carbon of the blood in the capillaries, the action of the heart and lungs becomes accelerated, in order to furnish a more rapid supply. A familiar illustration of the action of the vegetative system on the animal is afforded by the indisposition to exercise after a full meal. The most remarkable instance^o I have ever heard of the power exercised by the animal functions over the vegetative, is the case of an Indian man who suckled an infant whose mother died in the woods; the intense action of Philoprogenitiveness having caused the mammary glands to take on the action of secretion. Philoprogenitiveness, sympathizing with the condition of the uterus, has its activity increased just before the termination of gestation. I have seen a cat at

ⁿ Thus Alimentiveness probably stimulates the secretion of gastric juice. From numerous observations, continued now through a period of many years, I feel warranted in stating that in the human race, when this organ is very deficient, the digestive powers are always feeble.

^o See many cases of unusual suckling in *Elliotson's Physiology*, p. 839—40.—*Zoist*.

this period caress the kitten of another that she had previously been accustomed to beat, and I believe I have recognized facts of an analogous character in the human female.

A second channel through which a portion of the vital electricity, fluid, or ether generated by cerebral action unconsciously flows off, is the muscular system, producing natural language; and the ganglion of these hemispheric fibres is probably the anterior portion of the thalamus. Belonging to the class which perform their functions without consciousness, fatigue is of course not experienced from the action of this system; in which particular it resembles the reflex or true spinal, a resemblance which may be carried further, the habitual *carriage* of the body being analogous to the usual state of *tonicity* of the muscles, and the *movements* of the head and body, which result from vivid emotions, to reflex *acts*.

The third channel through which a specific species of nervous fluid or ether is propelled by the action of the vesicular superficies of the hemispheres, is that which conveys those impressions which constitute its animal function, and which upon reaching the central organ of Consciousness, ARE emotions and perceptions; and the ganglion of this division of the fibres of the hemispheres I conjecture to be the corpus striatum. The existence of a central organ of Consciousness seems to me an absolute necessity, and many circumstances concur to point out the tuber cinereum as its seat. It gives birth to the sense of existence and feeling of personal identity, to which appears always to be attached a capacity for experiencing pleasure and pain. Seated in the centre of the brain, the functions of the ganglia of the senses (including those of the hemispheres) may be deemed to consist in collecting as into a focus the sensations (perceptions and emotions inclusive) which it is the peculiar province of each to furnish, and holding them before it; and thus rendering it omnipresent as regards the operations of each. The volitions and consequent actions—proceeding from—(*qy.* co-existent with) the impressions made on Consciousness by the emotions and perceptions, are as certainly determined by the “laws written on the nervous pulp” as a reflex act; the only difference being, that whilst the latter follows immediately on the reception of its stimulus, the former are suspended—in those cases where the desire to act of one organ is opposed by the desire to refrain of another—till a process termed deliberation is gone through. This consists in an examination by the intellect, at the call of Caution,^o of the probable consequences which will accrue from the contemplated act to the different organs interested in the debate. Caution, at length satisfied on this

^o More properly, Love of Security.

head, removes its embargo, and a decision or volition comes into existence of an energy proportionate to the degree in which the impulses of the organs, *for* the act, preponderated over those, *against*: the measure of its power being, in fact the overplus of their energy remaining after having neutralized their antagonists. Thus by a law of our mental being, preponderating desire is the antecedent to volition, and volition the necessary sequent to preponderating desire. A decision to pursue a particular line of action once made, another organ (Firmness) comes into play, and in any future re-deliberation on the same subject, throws all its weight into the scale in favour of persisting in the resolution once taken, and thus prevents vacillation.

The numerous patches of vesicular matter in the cerebral crura may be the places where ideas of muscular *acts* are *translated* into muscular impulses. Motions requiring the combined action of numerous muscles are yet regarded by the mind but as units or simple acts, and hence it is quite certain that there must be interposed between the fibre or fibres through which the volition is first issued, and those by which it eventually reaches the muscle, a tract of vesicular matter, which, receiving from the mind the mandate to execute a certain action, propels in obedience a stimulating impulse of the requisite intensity to every muscle required to enter into play. Only a limited number of movements specifically distinct can be made by the muscles of the human body, and an independent portion of vesicular matter seems necessary for each. The circumstance that the actions of different muscles, after being repeatedly performed voluntarily, become associated together, so that a succession of regular motions can follow one another with unerring precision quite automatically, without any conscious effort on our part, (as in playing a musical instrument for instance,) is one of the greatest marvels of nervous action. The mechanism by which this is accomplished will most likely for ever remain beyond our ken, but the seat of the phenomena is probably either the crura cerebri or corpora striata. The association of different classes of ideas with reference to contemporaneousness or immediate succession, by which the recurrence of one of an assemblage or series summons up the rest, is a phenomenon of a similar character, and not to be referred to any separate faculty or organ of association, as was done by the old metaphysicians, but to laws regulating the action of the nervous matter in which the ideas are formed, by virtue of which, those changes in its state (constituting sensations) which have once occurred together, have a

tendency afterwards to recall each other. The various fields of view contemplated by the eye, seem to form series of daguerreotype pictures in the nervous matter, capable of being recalled as wholes, by an appropriate stimulus transmitted by an act of volition directed to this end. In this way we are able to reply correctly to questions, the answers to which, considered as facts, we were before ignorant of. Thus we may be asked the number of spots on the back of an absent dog, and although we may never have counted them or thought on the subject before, yet by summoning his image before the mind's eye we are enabled correctly to resolve the query addressed to us. This species of mental capacity has never received the attention it deserves; by means of it various kinds of knowledge being as it were written down in a book, and stored away by the mind to be made use of when occasion demands.

The science we call chemistry, is the body of laws which regulate the combinations of inorganic matter. Physiology may be defined to be *vital chemistry*, or the body of laws which regulate the combinations of organic matter. As all chemical action is nothing but the motions which produce fresh combinations of inorganic matter, so *all vital action is nothing but the motions which produce fresh combinations of organic matter*. The step from the inorganic to the organic world, is marked by the simple elements of matter passing under the dominion of a new *force* more powerful than chemical affinity, by virtue of which they enter into ternary and quaternary combinations. There can be no doubt however but that this new *force* exhausts itself in its struggle against chemical affinity, so as to require to be constantly renewed by nutritive matter. The vital principle or force is therefore elaborated by a certain combination of the simple elements of matter. The essence of vitality is then the power inherent in a certain form and arrangement of matter when placed under the requisite conditions regarding caloric, light, and electricity, of elaborating out of the simple elements of matter the vital principle, that is, a force similar to itself. Of all the agents which influence the affinities of the elements of matter and produce changes in their combinations, none is so powerful as *caloric*, and its power affects the organic equally with the inorganic world.

At a very low stage in the vegetable kingdom we meet with a contractile tissue (the analogue of the muscles in animals) possessed of *irritability*, that is, capable of being excited to movements by stimuli. As long as bodies are homogeneous in structure, or only such outward portions as external stimuli impinge upon are required to respond to the

impression, no necessity seems to exist for the intervention of any *agent of distribution*. When however the contractile tissue or apparatus of motion becomes concentrated and localized, the necessity of a channel of communication between the stimulus-receiving surface, and the tissue whose function it is to contract in answer, becomes obvious. This gives us a clear idea of the functions and essential parts of the reflex or true spinal nervous system ; viz., a *surface* for the reception of physical or chemical stimuli, and the propagation of a vital stimulus in reply ; *fibres*, the conveyors of this stimulus to a central organ or *ganglion* whose office it is to arrange and distribute the impressions through another set of fibres to the muscles required to respond. The anatomical distinctness of the true spinal system, the centres of which terminate at the medulla oblongata, proclaim that a line of demarcation may be drawn between its functions and that of the various organs of the nervous system seated above it ; and its peculiar office, the production of motions without consciousness in obedience to external stimuli, finds a parallel in the automatic movements of plants.

The passage from the vegetable to the animal kingdom is marked by the presence of nitrogen in the organized tissues of the latter, and by their being able to employ as food only organized products previously elaborated from the mineral kingdom by vegetables. Probably the transition is also marked by the birth of consciousness, and the superaddition to the true spinal or unconscious system, of a sensi-motor nervous system, in which *sensations* are the exciting causes of motion.

The first requisite of such a system in creatures possessing the faculty of locomotion is the sense of the *being* or *existence* of the different parts of the body, accompanied with a sense of their gravity, which capacity for reasons to be subsequently assigned, I locate in the central portion or vermiform process of the cerebellum, placing in the anterior lateral portions of the organ, the sense of temperature, and in the posterior lateral (which constitute the large cerebellar lobes in man), the sense of touch. The ganglion of taste and the auditory and optic ganglia must, I think, be regarded as an advance in organization upon the preceding. It may be asserted, and I believe must be admitted, that the *acts* we term consensual are no *proof* of consciousness ; it seems, however, to be the general object of nature to bestow sentience on matter, and the fact that her plan appears to have been to have progressed to the higher ranks of being, by almost imperceptible gradations, is in favour of automatic or unconscious acts being linked to volitional by an intermediate class. Destitute of memory or any power of retaining or comparing sensations,

the consciousness of this class is made up of a series of sensations. Attracted towards certain objects which chance throws in their reach, they make certain motions to attain them in obedience to this law of attraction, and pleasure *ensues*; animals endowed with a brain, on the other hand, *seek* objects in consequence of having an *idea* of the pleasure to be procured by their attainment.

All our divisions of nature are rather arbitrary than real, and however well marked may be the distinction between the lowest objects in one class, and the highest in the class above, we shall find between the highest in the former division and the lowest in the latter, the closest relationship. This many-sidedness of the *rapprochements* of nature, is nowhere more strikingly apparent than where attempts are made to classify the different functions of the cerebral hemispheres or brain-proper. Nevertheless I am of opinion that without descending to a minute classification they may be advantageously considered under three divisions.^p *First*: Perceptive faculties, whose food is impressions received from the ganglia of the external senses, which impressions are analyzed into a variety of qualities. Light, for instance, into colour, sound, into music. The impressions of the gustatory ganglion, which probably in animals without a cerebrum give rise only to bland or acrid sensations, into an infinite variety of flavours, &c. Form, size, distance, relative position, number, are appreciated and remembered.

Secondly: A class of propensities, desires, or emotions, whose stimulus is the perceptions of the first class; when these reach them, they excite a desire to act in a certain manner accompanied by a specific feeling or emotion, as when a buffalo takes to flight at the sight of a lion, and experiences at the same time an emotion of fear. Such an action is properly termed voluntary, although it is quite certain the buffalo could not act otherwise unless its nature were altered. This class may be considered under two heads; first, *selfish* organs, whose sole object is the preservation of the individual; secondly, *social* organs, which cause the individual to contribute to the welfare of others. The unanimous feeling of mankind assigns to the higher organs of this latter class, which occupy the coronal surface of the head, a rank and dignity to which the preceding or selfish class can lay no claim. The lowest organ of this class being Philoprogenitiveness, it is probable that the class as a whole is wanting in animals which do not nourish their young.

^p I omit any analysis of the higher reflective faculties, as being rudimentary in animals, and non-essential to my argument.

By far the greater number of the actions prompted even by the brain-proper, are *instinctive*, that is independent of experience, association, or any reasoning process. No sooner are certain specific features recognized in an external object by the perceptive faculties, than by "the law written on the nervous pulp" an emotion and desire to act is excited. Thus the fear felt by a rabbit the first time it sees a weasel, arises from no *conclusion* drawn by intellect as to its ferocity from the structure of its teeth and body—from no *association* of its previous appearance with the cries and disappearance of a comrade—from no *experience* of its hostility. Knowledge and habits derived from reason and experience, are gradually formed by association into instincts, and even transmitted to offspring; by which law the nature of animals is capable of being changed within certain limits, and they enter the world with a peculiar adaptation for existing under the same circumstances as their parents. The instinct inherited by the offspring of well-trained hunting dogs is a good example of this law. Another is afforded by the wildness of birds in districts long inhabited by man, contrasted with their absolute indifference to his approach in islands where he has never taken up his residence. Old birds of the corvidæ genus know by experience the danger to be apprehended from a gun, and will suffer an unarmed individual to approach much nearer to them than they will permit one bearing a fowling-piece to do. The transmission of acquired instincts to progeny is a department of natural history which has not hitherto received half the attention it deserves.^q Even the influence of one vivid impression on the parent during gestation is often manifested in the offspring, and the most trivial incident or *rencontre* occurring to a pregnant woman may cause the child all through life to experience as much loathing and disgust at the sight of a mouse, as mankind in general feel towards a toad or a serpent.^r

In concluding this very brief and imperfect survey of the functions of the nervous system, the question presents itself, in what way is the pre-existence of the lower orders necessary to the advent of the higher. Vegetable life doubtless existed on this globe millions of years before the presence of even the lowest animal, and from the commencement of animal life many millions of years probably elapsed before the lowest vertebrata made their appearance. Countless ages must have intervened from this period before the advent of man, whose appearance on the earth, even if placed a million of years

^q See striking illustrations in *Elliotson's Physiology*, p. 1129—1132.—*Zoist*.
See the same Work, p. 1117—1124.—*Zoist*.

back, is of most recent date when considered in relation to the time that must have been occupied in the consolidation, deposition, and arrangement of the strata on the earth's surface. The earth probably receives more light than she reflects, and thus the matter on her surface may gradually become impregnated or combined with a greater quantity. Solid land slowly upheaves its head above the deep, by the combined agency of the volcano and the continent-founding coralline. Soil and climate gradually become changed and ameliorated, and fitted for supporting the existence of higher races. But is it *only* by producing physical changes that the pre-existence of lower orders is a necessary preliminary to the advent of higher. As the lower tribes of animals require for their assimilation matter previously organized by vegetables, may not the higher require certain sentient principles, products of the organization of the lower, for the development of their superior intelligence. Leaving out of view *progress* by the appearance of new races, some law must govern the unquestionable increase in intellectuality of the human race.⁹ There is deep philosophy in the lines of Tennyson,—

“ For I doubt not through the ages one increasing purpose runs,
And the thoughts of men are widened by the process of the suns.”

Though I am fond of indulging in speculation and a great supporter of its utility, no one can be more impressed with the necessity of rigorously preserving a broad line of demarcation between the conjectural and the ascertained. Within these two years I have examined nearly three hundred brains, comprising those of most of the vertebrata resident in the British Isles, and ascertained the relative weight of the cerebrum and cerebellum in each, with a view to determine the function of the latter division of the brain. On the present occasion I must content myself with giving a very brief outline of the results of these researches, but it is my intention to take an early opportunity of laying them more in detail before the readers of *The Zoist*, accompanied with a table of weights.

About eight years ago my attention was arrested by the extraordinary sensibility to pain manifested by an individual possessing a large cerebellum; recalling some similar cases, the possibility of a connection between the large organ and the acute feeling struck me, and I examined the opinions of physiologists with regard to the function of this part of the brain. Finding my idea discountenanced by their writings,

⁹ Those who demur to this proposition are requested to consider the indisputably inferior organization of numerous savage tribes gradually becoming extinct.

and influenced also by the opinions of Gall, and still more by the cases that had come under my own observation indicating the connection between a prominent cerebellum and the sexual feeling, I concluded that the co-existence of the large cerebellum with acute sensibility was adventitious. Six years elapsed, when another case fell under my notice which induced me to reconsider the subject, and it now occurred to me that the sexual instinct was so entirely an affair of sensation, that a relation between its intensity and the size of the central ganglion of the sensory nerves was to be expected. When I came to examine the brains of the lower animals, and found the cerebellum to consist of three portions anatomically distinct, and bearing no sort of ratio in size to each other, I at once abandoned the idea of its being a single organ having only one special function, and asked myself the question, to which division tactile sensation, if located in the cerebellum, most probably belonged. My first ideas on the subject having been derived from observations on man, in whom the lateral lobes constitute its chief bulk, what little weight attached to them was in favour of this division being the seat of the function in question, and the superior sensibility of the skin in man seemed corroborative of this inference.

The numerous observations I have since made on the brains of the inferior animals, all so completely concur in shewing the relation between the size of the great lateral lobes of the cerebellum and the development of the cuticular system of nerves, that I consider the connection between them quite *established*. Nature has kindly presented us with some animals which seem formed for the solution of physiological problems, and whoever would obtain a clear insight into the functions of the cerebellum should study the development of this organ in the cetacea, birds, and the cheiroptera.

The cetacea present, of all animals, the greatest development of the cuticular system of nerves, which more or less pervade the whole of the layer of blubber interposed in this family between the skin and the muscles, and form a network of extreme minuteness on its external surface. In connection with this organization let it be observed, that the sense of feeling in these animals is so acute, as to enable them to communicate with each other at long distances by the vibrations of the water; and I have been assured by an individual who once saw an embayed porpoise put to death by some fishermen, that the cries of the animal when wounded were heart-rending, and conveyed the idea of most

acute suffering. In the porpoise the size of the cerebellum, as compared with the cerebrum, is as 1 to $2\frac{1}{2}$, and its unusual bulk is entirely occasioned by the enormous development of the great lateral lobes, which, equal in absolute size to those of man, far surpass his or any other animal's in the proportion they bear to the other nervous centres. Pursuing a living prey, and obliged to seek the surface at short intervals for air and thus lose sight of it, without this extraordinary development of cuticular sensibility to give it cognizance of the motions of the object of its chase, it would lose all knowledge of its locality at each breathing time.

In striking contrast to the cetacea stand the class of birds; clothed with feathers, any extraordinary development of sensibility in the skin would be superfluous; thin and membranous, it presents scarcely a trace of nerves, and in conformity we find that the development of the lateral lobes is quite rudimentary.^r The median lobe or vermiform process, however, attains in this class to an unusual magnitude, so much so, that the weight of the cerebellum as a whole, compared with that of the cerebrum, is not inferior to that of mammalia, and varies from 1 to 4, to 1 to 12. In considering the question as to what power birds possessed in a degree as commensurately greater than other vertebrata, as the median lobe of their cerebellum surpassed that of the latter in size, I was struck with the important fact of their capacity for traversing and supporting themselves in an element of a specific gravity so much less than their bodies. To do so must require great muscular power, and an extremely delicate sense of resistance when the ease and grace of motion are displayed, which characterize the flight of many birds. In the crow, whose motions are neither rapid nor elegant, the weight of the cerebellum is $11\frac{1}{4}$ grains, and that of the cerebrum 129, whilst in the common gull, who floats through the air in graceful curves, skims with rapid wing the surface of the waves, or sports with the wind in rapid zigzag starts, the weight of the cerebellum is 14 grains, with a cerebrum of only 63. The swift sparrow-hawk possesses a cerebellum of $6\frac{1}{2}$ grains, and a cerebrum of $36\frac{1}{2}$; the slow grey owl a cerebellum of 9 grains, and a cerebrum of 120. And in the swallow tribe, who live on the wing, the cerebellum reaches, proportionately to the cerebrum, the largest development to be found in the class, being as 1 to 4.

In man, during life, it may not be easy in many cases to

^r They might (in this class) not inappropriately be designated, as the *ganglia of the fifth pair*.

determine the proportionate development of the median lobe, as compared with the lateral; when however the whole occiput is narrow and contracted, we cannot err in concluding the median lobe to be deficient, and in all such cases I believe myself to have detected a certain ungainliness and angularity of motion. Such individuals cannot dance with grace, and are poor equestrians, skaters, &c. These and various other considerations which I will not now detail, have led me to the belief, that the median lobe of the cerebellum is the ganglion of the nerves of muscular resistance, conveying a sense of the position of the extremities and the centre of gravity. *The centre in fact of a system of sensi-motor nerves, playing as important a part with regard to the function of locomotion, as the true spinal or reflex plays with regard to the functions of ingestion and egestion.* Habit renders muscular acts so automatic, that we are almost totally unconscious of the great extent to which they are stimulated by the sensation of resistance, and how necessary this stimulus is to their long continuance without fatigue. When a boy, just learning to swim, I was very much puzzled by the fact that after swimming across a small pond which I could cross in about twenty strokes, I felt fatigued. The expenditure of muscular power must, I felt sure, be very small, yet the fact of exhaustion being felt was equally undoubted. The explanation of the phenomenon I never knew till my recent researches revealed it. Some little allowance must be made for the motion being a novel one, but the grand source of the fatigue was, that the dynamic-sensi-motor nervous system being unused to respond to a stimulus offering so little resistance as water, the whole task of keeping up the motion fell upon the volitional. If a strong man capable of walking forty miles in ten hours without resting, were suspended by a belt placed round the waist, and required to go through the action of walking; although moved forward artificially through the air at each stride so as to keep the centre of gravity in a proper position in advance, yet I am convinced he would be thoroughly fatigued with ten minutes of this exercise.

Had any doubts remained in my mind of the correctness of my view of the functions of these two great nervous centres, the lateral and median lobes of the cerebellum, they would have been dispelled by an examination of this organ in the cheiroptera, or bat family. These insectivora combine in one, the large lateral lobes of the cetacea, and the large median lobe of the bird; and in harmony with the views of their functions just given, display the acute tactile sensibility of the former class, united to the agility and delicate sense

of resistance of the latter. Spallanzani found that bats when blinded avoided obstacles in their flight with the greatest precision, and this in places to which they were strangers. They flew with rapidity through apertures only just large enough to allow of their passage, and even avoided small threads stretched across the apartment; thus exhibiting an example of exquisite tactile sensibility, the only parallel to which is among the cetacea. The cerebellum in the bat is, proportionately to the other nervous centres, larger than in any other animal. In the common pipistrelle, the average (drawn from six) is, cerebellum $\cdot 96$ of a grain, cerebrum $1\cdot 78$.

With regard to the vegetative function of the great lateral lobes, various considerations, which want of space must prevent my now enumerating and explaining, have led me pretty confidently to conclude that it presides over the secretion of the sebaceous glands, and probably also over that of the testes, the tubular structure of which proclaim them to be allied to the sebaceous system. The ganglion of the nerves of temperature I conjecture to exercise an influence over the secretion of the sudoriferous glands, and the action of the hair follicles. Every ganglion may be regarded as a gland secreting the appropriate nervous stimulus for the system of nerves over which it presides. The median lobe of the cerebellum, besides secreting the nervous energy which is expended by its nerves in producing muscular contraction, doubtless exercises a most intimate control over the action of the heart and lungs, every muscular effort necessitating increased action of these organs to supply the waste occasioned by it.

The preceding views, if well founded, are evidently capable of many important applications to surgery, pathology, and therapeutics. The great power to be exercised over disease by acting on the nervous centres through the cuticular system of nerves, is not yet adequately appreciated, though ultimately destined in my opinion to replace to a great extent the present system of pouring drugs into the stomach. Every one must be familiar with the fact that in surgical operations the shock to the system often bears little proportion either to the importance of the parts wounded, or the state of the general health. In such cases the size of the lateral lobes of the cerebellum will prove a most valuable adjunct to diagnosis. I have known fine athletic men faint from operations that I have seen weakly women bear with comparative indifference. In such parties the development of the cerebellum has been enormous; and whenever this is the case, I would suggest the application of pounded ice to the occiput, and a

warm bath to the feet, previous to, and during an operation. The same treatment might be advantageous in lock-jaw, which would seem to arise from an irritation of the lateral lobes of the cerebellum, produced by pain in the vicinity of the origin of the nerves distributed to the muscles of mastication.

I must defer till another opportunity the statement of the views I have been led to form as to the manner in which the lateral lobes of the cerebellum contribute to the energy of the sexual feeling.^r But it will perhaps be expected that I should give some opinion on the *quæstio vexata* of the influence of emasculation on the development of this organ. When I read the arguments *pro* and *con* of Mr. Noble and Dr. Carpenter on this subject, I was forcibly reminded of the remark of Gall, who says on a parallel occasion, "It would be difficult for such learned men to have recourse to so laborious a source of true knowledge as observation." At the outset of my inquiries this was the first subject that attracted my attention. Believing each portion of the surface of the body to be represented by a separate portion of the vesicular matter of the great lateral lobes of the cerebellum, all the alteration in the organ which I should anticipate from emasculation, would be a slight diminution of the portion representing the generative organs, and the parts with which they closely sympathize; and on the whole the result of my inquiries is in favour of this conclusion. The diminution however being so trifling as not to counterbalance the congenital variations in the size of the organ which occur in individuals, the point can only be satisfactorily determined by taking the average of a large number of cases. Having procured the brains of six capons, I found the average proportion of the cerebellum and cerebrum to be $6\frac{1}{4}$ grains to $45\frac{1}{6}$. Having previously found the average of six cocks to be $7\frac{5}{6}$ to 44, this appeared to be a very decisive result; but finding, as I extended my observations, a great difference in the size of the parts in different breeds of fowls; I procured the brains of five cocks of the same breed as the capons through the same London poulterer, and from the same town in Essex; these gave a proportion of 7 to $46\frac{2}{5}$, a much less striking difference, but yet strongly corroborative of a certain amount of change.

^r Da ich glaube, dass die Entwicklung der Seiten-Flügel des cerebellums eine anzeige der Empfindlichkeit der Oberfläche des Körpers ist, so erwäge ich, dass *ceteris paribus*, je grösser ihr Umfang ist, desto grösser wird das Vergnügen seyn welches die Ausübung der Begattung gewährt. Ich glaube jedoch an das Vorhandensein eines Organs des Zeugungstriebes in dem cerebrum, welches das Weib zum Gegenstande der Begierde macht, und auf der unteren Oberfläche des Hintertheiles desselben liegt.

Having removed the right testis from a kitten three days old, I examined the cerebellum at the age of $1\frac{1}{4}$ year, and could detect no inequality on its sides, though having placed it in spirit I made it the subject of repeated observations. I may extend the same remark of not being able to detect any inequality in the halves of the cerebellum after unilateral emasculation, to the cases of a ram and a hare. The result of my researches on horses, pigs and sheep, is in favour of emasculation producing a diminution of the absolute size of the cerebellum, but not of its relative size as compared with the cerebrum, the development of the latter organ being quite as much interfered with; which is what I should be quite prepared to expect.

To enter into a detailed refutation of the arguments by which it is sought to prove that the cerebellum is a sort of supplementary addition to the nervous system, an organ as high or higher in the ascending scale than the cerebrum, whose function is the "co-ordination of movements requiring the united action of many muscles," would be foreign to my present purpose, and perhaps superfluous after what I have already stated. Dr. Carpenter observes, "In proportion as the extremities acquire the power of prehension, and together with this a power of application to a great variety of purposes,—still more in proportion as the animal becomes capable of maintaining the erect posture, in which a constant muscular exertion, consisting of a number of most elaborately combined parts, is required,—do we find the size of the cerebellum and the complexity of its structure undergoing a rapid increase. . . . Man surpasses all other animals in the number and variety of the combinations which he is capable of executing, and in the complexity of the combinations themselves. Thus if we attentively consider the act of *walking* in man, we shall find that there is scarcely a muscle of the trunk or extremities which is not actually concerned in it; some being engaged in performing the necessary movements, and others in maintaining the equilibrium of the body, which is disturbed by them." Unfortunately for these ingenious speculations there is such an animal as a porpoise, a sort of animated barrel, which minus "prehensile extremities capable of being applied to a great variety of purposes,"—minus "the capacity of maintaining the erect posture,"—minus *every* feature enumerated by Dr. C. as connected with a large cerebellum, yet possesses the organ more largely developed than any other animal, the bat excepted.

Dr. Carpenter observes, "The peculiar connection of the cerebellum with the sensory ganglia was supposed by Foville

to indicate that it is the actual seat of sensation ; an idea at once negatived by the entire absence of the organ in invertebrated animals :” and pray, Dr. C., what becomes of your idea that the thalamus opticus is the seat of sensation ? Will you affirm, or rather have you one tittle of evidence to entitle you to affirm, that the thalamus is developed in a lower stage of being than the cerebellum ? Such a notion is a mere piece of complacent assumption, and in the present state of our knowledge, or rather ignorance, of the exact functions performed by the nervous centres in the invertebrata, for any one to undertake to assert that none of the cephalic or thoracic ganglia are the analogues of the cerebellum of the vertebrata, would be much more indicative of folly and presumption than wisdom.

The purely literary scientific man, however adroit in disguising his want of practical acquaintance with the subject of his criticism, rarely succeeds for any length of time in his object ; his ignorance will peep out, and often does so in the assertion with all the air of novelty of some book-learnt fact, which every one practically acquainted with the subject knows that the merest tyro, who has ever observed for himself at all, must have met at the very outset of his observations. Of this character in a striking degree is the formal announcement by Dr. Carpenter, that “the observations of Professor Retzius upon the varieties of form which the cranium presents in different races, have indicated this among other facts,—that the *position* of the cerebellum may vary considerably, being much more horizontal in one case, and more vertical in another, so as to correspond with a greater or less posterior protuberance, without any corresponding variation in the size of the organ itself.” Now the fact is that it would be impossible to take twenty English skulls from amongst the population at random without seeing this fully exemplified, such is the mixed character of the race ; and it is quite as ridiculous and indicative of ignorance to announce this fact so notorious to phrenologists, as a novelty, as it would be to give out as a new discovery just made, that there was a connection between emphysema of the lungs and diseased heart, or between disorganized liver and dropsy.

Had Dr. Carpenter been impressed with the *duty* of making himself acquainted with subjects before he undertook to criticize them, he would not have betrayed the disgraceful ignorance of the writings of Gall, and phrenological principles generally, which characterizes his article. He says, “Scarcely any attempt has been made to map out the base of the brain into organs, and no attempt whatever has been

made to shew what share is taken by the internal surface of the hemispheres in the psychical operations of man or any other animal; so that we are scarcely beyond the mark in asserting that nearly (if not quite) *one half* of the cerebral surface is *totally unappropriated*. . . . No external examination of the cranium, such as alone can be made on the living head or the unopened skull, can give any account of the form of the *base* of the hemispheres," &c. What are we to think of such assertions as these, when the fact is, that the convolution, the prominent development of which *first led to the discovery of phrenology*, that of Language,—*is the very last on the base of the anterior lobe—the whole* under surface of which *is mapped out*. That Dr. C. does not know how to give any account of the form of the base of the hemispheres from an examination of the living head, no one will dispute; but when he asserts the thing cannot be done, he states that which is untrue, and exposes his own ignorance. Unfortunately for Dr. C., there is no part of the surface of the brain on which the development of the convolutions can be more exactly determined by external indication than the base of the anterior lobe. The size, prominence, and position of the eyes—the breadth between them—their position with relation to the superciliary ridges—the breadth, prominence, and *infinitely varied curves* of the latter,—form a criterion for estimating the development of the convolutions seated in the *fossæ* on each side of the *crista galli*, and on the roof of the orbit, which we may seek for in vain with respect to other parts of the brain. To be able to read these signs, however, requires *study, personal observation, a practical acquaintance* with the subject,—qualifications, in short, quite the reverse of those which form the critic, the sole requisite for the practice of whose art would appear to be presumption. With regard to the middle and posterior lobes, there are external indications, such as the breadth of the head in the basilar region,—the relative position of the roof of the orbit, meatus auditorius, and occipital spine,—the protrusion or retraction of the cerebellum,—which give a very good indication of their general size, and much more accurate information with regard to the development of particular portions, than persons not conversant with the subject would *à priori* have supposed. Observation has taught me that the prominence of the portion of the skull immediately below Combativeness, always produces a great dread of physical pain, from which I conjecture that the under surface of the brain lying immediately above the cerebellum, is principally devoted to the analysis and memory of the sensations furnished by this organ.

After stating that the anterior lobe is developed in the embryo before the middle and posterior, Dr. C. exclaims, "Strange as this assertion may be to phrenologists, &c." Now the fact is, that the prior development of the anterior lobe is both noted and commented upon in Gall's writings. Considering that the discoverer of phrenology was the founder of the anatomy of the brain,—FOUNDER, I repeat, is the word to employ, and the one which the unanimous voice of a grateful posterity will one day bestow upon him,—sneers at the anatomical knowledge of phrenologists from a man like Dr. Carpenter, who has *done nothing*, are as ludicrous as inappropriate.

Half styling himself a phrenologist, with an "*if we find reason to adopt the phrenological system as a whole*," Dr. Carpenter manifests a strong and deeply-rooted hostility, without the manliness of an open foe. He carps and cavils, nibbles a little here and a little there, detracts, depreciates, and shews unmistakably the animus which governs his proceedings. He would *like* to condemn the whole system, but haunted with the fear of its truth, he condemns with a reservation, *critically, judiciously*, that is to say, leaving a wide margin, to hop backwards or forwards as expediency may in time to come dictate.

T. S. PRIDEAUX.

Southampton, Dec. 1846.

MESSRS. FORBES, WAKLEY, & CO.,

THE ANTIMESMERIC CRUSADERS.

“I would rather stand on the ridge of Etna than lower my head in the Grotto del Cane. By the one I may share the fate of a philosopher, by the other I must suffer the death of a cur.”—*W. S. Landor.*

EVERY well-told tale has its point or moral from which instruction is to be obtained. And so the life of every man affords materials for reflection. Whether he be elevated or depressed in the social scale—whether he be rich or poor, philosopher or peasant, a careful survey of his career affords some point or moral, which, all who care for the welfare of the young should point to as a beacon, indicating some fault to be avoided, or some virtuous action to be applauded and copied.

With this object in view we shall make some observations on the course pursued by certain individuals regarding mesmerism. We shall not collect our information from any doubtful source, but draw from the fountain head, from the written words of the men themselves. It may be urged by some that we should direct our attention solely to the advancement of mesmeric science, and that we should cease to bestow attention on the actions of individuals; but, we think, that there is another duty to be performed, and that when the progress of a science has been checked by the frequent display of ignorance and by the most shameful perversion of facts—when the existence of the most beautiful and inexplicable physiological phenomena has been denied, and the discoverers and experimenters have been denounced as fools and visionaries, rank impostors, and detestable quacks, and by these means a cry raised throughout the length and breadth of the land which has caused the honest investigator to pass through a species of martyrdom,—when all this has been done in our own time, in a few years, and when the men who have accomplished this have lived not only to see the

error of their way, but in one instance, to confess it, albeit in a jesuitical manner, we ask, is there not some moral to be learned? Is the self-elected critic not to be informed of his fallibility? Is the wilful perverter of truth not to be told, and to be convinced from his own writings, while yet alive, that the *opinions* of the sciolist must give way before the accumulation of *facts*? Is the man who has spent his life in the endeavour to mislead his brethren not to be shewn his iniquity? And are we not to point out to all men the utter irrationality and absurdity of surrendering their reason to the commands of authority, and of neglecting to investigate a new truth because a few may sneer, ridicule, and denounce? Is this not, we ask, a public duty? It is the neglect of this duty which makes men so bold in advancing their superficial opinions, but, let it be once understood that all those who publish absurd and fallacious doctrines shall submit to the most free and searching exposure, and we have applied a complete check to an evil of the most serious magnitude. The example which we are about to expose is perhaps the most shameful on record. What do we behold? The man whose position demanded the practice of the strictest impartiality and integrity, forgetting his high duty, and leading astray all those who naturally looked up to him for information,—neglecting to inform himself of the rights and merits of the question under discussion, and because the popular voice at the moment seemed to demand an anathema, seeking the unscrupulous pen of some ready but needy fool, and forthwith issuing it. Because a violent and virulent hebdomadal publication, edited by Mr. Wakley, had succeeded in creating “a blaze” in the medical profession; the would-be respectable quarterly, edited by Dr. Forbes, descended to the same course, pandered to the depraved tastes of those it should have striven to elevate and enlighten, and ever since has watched the progress of events, changing the tone of its communications just in proportion as the money-risk became less and less, and the profession were inclined to receive bit-by-bit truth.

Many of our readers will remember the injurious effect on the public feeling which this immoral course produced. So great was the outcry that men were afraid to speak of the subject, and the title of mesmeriser became a term of reproach, and the signal for the pity of some and the abuse of others. Men band themselves together for the purpose of releasing the slave from his chains and the torture-lash, but thought-slavery is still a predominant feature of modern civilization,—men are still tied down to the prescriptions of their forefathers, and in this boasted age of freedom, this vaunted

land of liberty, perhaps there never was a period when tongue-persecution was more vindictive in its outpourings, or, when the honest man had more need of caution in promulgating his views, unless, perchance, they chime in, to a certain extent, with the recognized doctrines of society. But some will say, why, there never was a period when men enjoyed such liberty of speech, or, when the press was so unshackled. This is true, but this is not the whole of the picture. Take for example the career of any scientific innovator. It is true that he has liberty of speech—it is true that he may employ the printing-press for the purpose of disseminating his doctrines, but look at the penalty. No sooner are his views promulgated than all those who consider themselves interested in “things as they are,” commence, not to reason with him, not to disprove his facts, or to refute his arguments, but to damage his character, to propagate slanders, to impute improper motives, to make use of “*scientific capital*,”^a which being interpreted means the adoption of all measures calculated to work on the prejudices of the vulgar and illiterate, and thus to injure the party to be “*put down*.” In a late instance to such an extent was this system carried, that not only did the whole periodical literature of the day, with very few exceptions, lend their aid to crush the scientific truth-seeker, but men with large boards were sent through the streets of the modern Babylon, on which was affixed an absurd and disgusting print, tempting the curious and those afflicted with prurient imaginations, to purchase a small pamphlet containing the most abominable and wicked slanders.

Can we as a people boast of our liberty of speech and of our perfect freedom, when we have not yet learned to respect the most sacred right of our neighbour, the right of thought? Can we as a people boast of the power of our printing press, when we permit that power to be in the hands of men who prostitute it for the most base and wicked purposes? It is useless to say, that rational men pay no attention to such proceedings, and that only dishonest individuals would wield the power entrusted to them for an improper purpose. Dishonest enough they are in all conscience, but they are the men society permits to deceive and mislead them. To our view there is something more than dishonesty of purpose, there is a display of the most rampant animalism in the en-

^a The Americans at the period of an election speak of “political capital” which in plain English means the invention of the most abominable falsehoods, and the circulation of the most exaggerated statements, for the purpose of damaging in public estimation the man, or the party, another party may be opposing.

deavour to "*write down*"^b an individual who is investigating a new truth and therefore helping forward his fellow men;—there is something more than laxity of morals, there is the manifestation of a low, vulgar criminality, when the editors of "*Quarterlies*" again and again sneer at that which they do not understand, and abuse and vilify men who deserve our respect and esteem. Such conduct makes manifest the absence of those high moral and intellectual qualities which characterize and adorn the perfect man. We write strongly on this point because we have to expose a great public abuse, we have to shew that editors trust to the short memories of their readers, and thinking that their productions are not read a second time, presume that they may change their opinions as often as they please and still keep their character for wisdom.

When a scientific novelty is broached, to reasonable and conscientious men, *this* course appears to be the only one which can be followed by the individual conducting a philosophical publication:—to announce the novelty—to call upon scientific men to investigate the subject, and to report to the recognized channels for the reception and diffusion of information. During this period the editor should not be idle. He should investigate for himself, when this is possible, and when it is not, he should endeavour to ally himself with those who have done their utmost to do so, and by these means to use every effort for the purpose of obtaining a cautious and philosophical report—one, calculated to advance and not to retard genuine science. Every one must agree in the opinion that the system pursued with regard to mesmerism has been the reverse of this. That the man who attempts to instruct others should first instruct himself, seems to us a course, the rationality of which is so self-evident, as to require but little discussion. And yet how frequent are the examples of men raising themselves to the rank of master without the necessary intellectual qualifications, and without bestowing one thought on the moral law which they break through, or, the amount of misery which they produce by the improper bias they give their confiding disciples. It is strange, too, that these superficial men are always carried away with the belief that they are performing a great public good, when they advance their

^b What will not men attempt to write down? Perhaps the only ancient attempt to write down a natural truth which at all equals in absurdity the efforts of the modern mesmeric obstructors, was that memorable movement on the part of the followers of Aristotle, who not only refused to look through Galileo's telescope to see the satellites of Jupiter, but positively attempted to *write down!* these unwelcome additions to the solar system.

ill-matured opinions on a disputed point; in fact, they become so inflated with the importance of their self-imposed power, as to be utterly regardless of the obligations they incur. To become a public instructor without passing through the preliminary stage of laborious study to ascertain the truth, is in its practical results the same as putting out the eyes of those it is wished to enlighten. We have always endeavoured to expose such men, not from any feeling of ill-will, or spirit of revenge, for the great wrong they have committed, but because it is right and just to draw a strong line of demarcation between the man of science and the superficial babbler—between the real worker and his counterfeit and noisy opponent. The writer who fairly states his facts and his arguments, even if they be opposed to our own views, shall always receive our most respectful attention,—but the self-elected judge, the man who disseminates error, who perverts facts, who deals in assertions without proof, and supports his opinions by the most flimsy and fallacious arguments, shall be exposed with an unsparing pen.

“Soft and easy touch a nettle,
And it stings you for your pains;
Grasp it like a man of mettle,
And it soft as silk remains.”

On such an occasion we shall not permit ourselves to be influenced by mere feelings of humanity,—justice is our motto, and those kindlier promptings which on less important occasions would have full sway, must here be utterly discarded.^c “Is it,” asks Mr. Stewart, “more criminal to misrepresent a fact, than to impose on the world by what we know to be an unsound or a fallacious argument? Is it in a moral view more criminal, or is it more inconsistent with the dignity of a man of true honour, to defraud men in a private transaction by an incorrect or erroneous statement of circumstances, than to mislead the public to their own ruin by those wilful deviations from truth, into which we see men daily led by views of interest or ambition, or by the spirit of political faction?”

Such then being our opinion of the duty of those individuals who conduct our periodical literature, we simply ask,

^c We cannot forbear from again quoting an anecdote we related on a former occasion (*vide Zoist*, Vol. II., p. 276.) We are in a position *to vouch* for the truth of it. “A gentleman who was on intimate terms with Dr. Forbes, and who resided in the country, commenced the investigation of mesmerism in 1841, and after convincing himself of the truth of the science, wrote to Dr. Forbes to inform him of the fact, and to offer to exhibit to him several cases. For this purpose he offered to take him, if he could spare the time, to three separate towns, to witness the experiments of three different mesmerisers. *Two letters were written in a fortnight, but no answer was received!*”

has Mr. Wakley, the editor of the *Lancet*, qualified himself for the office of judge?

“ ——— a man must serve his time to every trade
Save censure : critics all are ready made.”

Has Dr. Forbes, the editor of the *British and Foreign Medical Review*, done this? (we beg pardon, but we always place Dr. F. next to the former sage, because he is but a follower in the antimesmeric Crusade, the former gave the cue, the latter was too eager to follow. *De gustibus non est disputandum*. Verily, they shall have their reward.) Did the late Dr. James Johnson do this? Has the editor of the *Medical Gazette* done this? In fact, is there one British medical journal whose pages have been open to the insertion of authenticated cases, or the discussion of questions bearing on a subject of so much importance? The editor of the *Medical Times* has to a certain extent done his duty, but his advocacy of mesmerism is not of that decided character which would authorize us to consider him a bold and uncompromising assertor of *what he knows to be true*.

We have not space, if we had the inclination, to refer to all the absurdities, slanders, falsehoods, base insinuations, grovelling conceptions, vulgar and slang inuendoes, &c., which we could cull from the pages of the journals above enumerated; to say nothing of the perverted facts, suppressed facts, and the publication of *facts* which never had an existence,—we shall leave all this, to us, unprofitable work, to some future collector of the absurdities of the would-be scientific, and at present satisfy ourselves with placing before our readers in a succinct form the sayings, doings, and writings of the most notorious,—we cannot say while Mr. Wakley is in this ‘vale of tears,’ the most unscrupulous,—of the party of truth-opposers, Dr. J. Forbes.

There have been *three* articles published in the *British and Foreign Medical Review*. One in April, 1839, another in April, 1845, and another in October, 1846. We select a few specimens.

“To devote an article to the consideration of animal magnetism, now that the English practitioners are one and all ashamed of its name, would be a work of *supererogation*, if the *delusion*, unabashed, were not yet parading itself over some parts of the continent; and if its return to

“We propose to ourselves a brief investigation of the existing pretensions of animal magnetism, or mesmerism. In proceeding to prosecute this task, we shall, in the first place, *advance the reasons which, in our judgment, urge a dispassionate examination of the subject*; second-

these shores, and to our own hospitals and colleges, at any future period were quite out of the question.”—*British and Foreign Medical Review*. April, 1839. p. 305.

“If we can quicken its decline where it now reigns in the hearts of nervous proselytes and *dreaming physicians*, or can assist in forming a barrier against a probable revisitation of it, we shall not think the otherwise more than due attention we have given to the *wild productions* which treat of it entirely thrown away.”—April, 1839. p. 305.

ly, we shall point out the kind of evidence we deem necessary for the establishment of each class of the alleged phenomena; and we shall then proceed to discuss the question of their validity.”—*British and Foreign Medical Review*. Apr. 1845. p. 429.

“We hold ourselves in readiness to witness and candidly to examine any novel fact that may come in our way, as we believe our minds to be open to conviction on satisfactory evidence being adduced; *and whilst we have at all times pursued this method ourselves*, it is the one we would, in conclusion, earnestly recommend to our readers.” April, 1845. p. 485.

“We think that mesmerism has hardly received fair play at the hands of many of our professional brethren, *or in the pages of some of our contemporaries*. Its pretensions, to some extent, however, are too well supported both by the number and respectability of the witnesses to justify an opposition made up almost exclusively of *ridicule and contempt*.”—April, 1845. p. 430.

“We conceive, then, that the evidence attesting the fact of certain abnormal states being induced by mesmerism, is now of such a character that it can no longer be philosophically disregarded by the members of our profession, but that they are bound to meet it in the only way in which alleged facts can satisfactorily be either verified or confuted, — by observation and experiment.” — October, 1846. p. 484.

“Considering the high sanction which even a temporary belief in the powers of animal magnetism has obtained in this country, we look upon its recent rise and progress, and its abrupt and shameful fall, *as powerfully calculated to degrade a profession which* is certainly, for other reasons, not rising in public estimation.”—April, 1839. p. 305.

“There must surely be a sufficient number of persons of *sane mind* in the profession who have thought *as we have thought*, to exempt us from the suspicion of affecting wisdom after the fact, when we say that, from the first dawn of these diverting but degrading scenes to the last, from the first burst of blank surprise in the good unscientific public of this country, through all the phases of advancing credulity among the more scientific, down to the last complete and melancholy explosion, we have never varied from a most hearty, entire, and unconcealed disbelief of very nearly all the phenomena exhibited by all the patients, and related by all the practitioners, without exception.” April, 1839. p. 304.

“That there was *gross deception* somewhere, we were always sure; the only doubt we had was as to the precise point where the *deception* began.”—April, 1839. p. 304.

“In how much better a position shall we be *after investigation* for confuting the imposture, if such it shall turn out ultimately to be, than in continuing to treat the subject with contemptuous disregard! Of one thing let us rest assured, not only the public, but the more sober-thinking of the profession will, ere long, *hold those at a disadvantage*, who, in opposition to facts, apparently well authenticated, can or will but adduce mere unsupported argument, or ridicule.”—October, 1846. p. 485.

“When it is considered that men like Cuvier, La Place, Hufeland, and Treviranus, have not refused their testimony as to the reality of some of the facts of mesmerism, we hardly think it right to dispose of the whole question, unexamined, by the facile process of a self-complacent *poo-poo!*”—April, 1845. p. 430.

“From the curious and extraordinary accumulation of records amassed by the animal magnetizers, *we have from the beginning been very much persuaded* that, at the foundation of all the extravagances of the mesmeric disquisitions, there would ultimately be discovered *some truth*.”—October, 1846. p. 487.

“That our author and his associates should have conspired to delude, and to mystify their friends and their countrymen at home, without any conceivable motive, we hold, indeed, to be too ridiculous to imagine for a moment.”—Oct. 1846. p. 479.

“We observed with some little disgust, here and there a practitioner willing to become the *provincial* wonder, and only restrained by his prudence from declaring what a mixture of ignorance and cupidity prepared him to assert and to do.”—April, 1839, p. 304.

“But above all we lament to see the *great delusion* supported by one of the ablest physicians of this country, filling the most important chair in the largest medical school of the kingdom.”—April, 1839. p. 304.

“Pass a few short months, and the delusion stands exposed; the actors are declared to be deceivers or deceived, the facts so lately boasted of are trampled upon with contempt, and the doctrines built upon them are laughed to scorn.”—April, 1839. p. 303.

“The fashionable crowd flock to a new *prima donna* or to a watering-place doctor; and the half-converted physicians and surgeons never mention the subject more; for, although *the folly will rise again*, it will scarcely be in their time.”—April, 1839. p. 303.

“But when an honest and intelligent witness circumstantially relates, as having occurred, what is already admitted to be neither impossible nor improbable, the presumption, *à priori*, is certainly altogether in his favour.”—October, 1846. p. 479.

“Now we maintain that we are not entitled, in reason, to reject the facts, or alleged facts, above stated without at least a fair examination. It were very easy for us to chime in with the ordinary professional ridicule in relation to such statements; but, in common honesty we conceive that we are bound to take a different course.”—Oct., 1846. p. 479.

“Indeed we hesitate not to assert, that the testimony is now of so varied and extensive a kind, so strong, and in a certain proportion of cases so seemingly unexceptionable, as to authorize us, nay, in honesty, *to compel* us to recommend that an immediate and complete trial of the practice be made in surgical cases.”—October, 1846. p. 485.

“We ourselves entertain not the slightest bias or prejudice upon either side of the question. We have at no time resolved that the thing could not, or should not, be so.”—Apr., 1845. p. 430.

“Again, WE SAY, let it be *tried* upon patients about to be submitted to the knife.”—Oct., 1846. p. 486.

FINALE.

THE LATEST BULLETIN ISSUED, *at present.*

Letter from Dr. Forbes to Dr. Elliot, of Exeter.

“ Old Burlington Street,
“ Nov. 28th, 1846.

“ Dear Sir,—I had never heard of your mesmeric controversy before your letter arrived, and at this moment I have not time to look any further into the matter than to read the letter signed ‘H. U. Janson,’ in the *Western Times* of this day’s date. The statements therein made relative to myself *are altogether untrue*,—I mean, as to my having *changed my opinion* of mesmerism (!!) Since the period when I began to pay some attention to it personally, it so happens THAT I HAVE NOT ALTERED MY VIEWS IN ANY RESPECT, AS YOU WILL SEE BY LOOKING INTO THE VARIOUS ARTICLES ON THE SUBJECT OF MESMERISM IN MY JOURNAL,” &c., &c. (!!!)

Litera scripta manet. Can any unprejudiced person read and compare the above extracts, and say that the editor of the journal in which they are to be found has been influenced by a genuine love for science? Is it possible for one moment to suppose, that when the first article was written the editor was anxious to discover by examination the truth or falsehood of mesmeric doctrine? Had he not decided the point without examination, and did he not therefore mislead the medical practitioners of the United Kingdom, and thus retard scientific truth? “*It so happens that I have not altered my views in any respect.*” *Proh pudor!* Is there not something humiliating to be compelled to record such tergiversation, and to proclaim that this disingenuous and unphilosophical individual is a member of our own profession? No man who is influenced by pure and lofty motives could inflict a blow for the express purpose of damaging the reputation of his compeers; much less could he permit his injurious opinions to remain on record, without some attempt to undo the mischief he has produced, and to explain away the unfair advantage he took at a period of professional and popular excitement.

Let it not be supposed that we advocate the absurd doctrine, that because a man has once expressed an opinion, he is to be servilely bound to its advocacy. On the contrary, we esteem the man who conscientiously changes his views, of

whatever character they may be; but we expect to be furnished with proof that the change is the result of sincere conviction, brought about by a careful survey of facts and arguments, and not from a timorous subserviency to popular impressions. The man who is not emancipated from the control of mere interest or passion, is surely not justified in arbitrating on a disputed point in philosophy; and if, as in the present instance, he has elevated himself into the office of judge, we should be still less justified in countenancing for an instant the belief that his opinions are worthy of record, or in the remotest degree to be considered as the dicta of a sage.

We trust that this exposure will not only be of service to Dr. Forbes in his editorial capacity, but also to his professional brethren, who appear to us on many occasions to exalt the conductors of their periodical literature into standards of truth. The editor of a journal is as prone to error as his numerous readers; and that past experience does not warrant us in removing Dr. Forbes or his coadjutors from the catalogue of fallible men, this number of our journal abundantly proves.

If we are asked, how is the truth or falsehood of a disputed point in medical philosophy to be ascertained, we answer, by free and unfettered examination and discussion. Enlist all men in the cause—neither forbid nor denounce. Let not the examination be commenced by drawling forth *misereres* on the past weaknesses of men; by publishing a declaration that “the empire of medicine has just passed through an unaccountable paroxysm of credulity,”—that it is determined “to quicken the decline” of the new truth, and “to assist in forming a barrier against a probable revisitation of it,”—that it is lamentable “*to see the great delusion supported by one of the ablest physicians of this country, filling the most important chair in the largest medical school in the kingdom;*”^d but, rather let it be commenced by shewing men the true method of investigation, and the uses and merits of an inductive philosophy,—by raising a hue and cry which shall bring to our aid all *thinkers*, being impressed with the opinion that if the question is one to be solved by an appeal to reason, that the probability of the desired end being ac-

^d We beg our readers to remember that these are Dr. Forbes's own words. “The great delusion” refers to mesmerism, and “the ablest physician of this country” refers to Dr. Elliotson, whom he was endeavouring to write down. But the attempt has failed. What is the moral to be learned? It is this: “Let the man who is in possession of a truth *take his stand upon it*, and the opposing world will come over to his opinion.”

complished is increased in the exact ratio that we multiply the number of inquirers. Let argument be opposed to argument, let opinions clash, and from the wordy turmoil good must result, for erroneous doctrines can only be uprooted by proving their fallacy, and this is an appeal to reason.

We contend that it is even now impossible to estimate the amount of mischief which the article published in 1839 produced. The aim was deadly. Men appealed to it on all sides. So triumphant was the editor, that the article was made a means for advertizing his journal, and where this did not reach, it was acutely perceived that a sixpenny pamphlet would, and forthwith it appeared in a separate form; it was circulated in all quarters—advertized in every journal—read by every body—quoted by every body—and every body, including his *confrère* Mr. Wakley, sang the praises of Forbes of the “British and Foreign.” A host of scribblers immediately followed the great authority. It is strange that time has not abated their fury nor diminished their numbers, and still more strange, that they apparently do not perceive that they are now engaged in combatting the general who marshalled and drilled them for the fight. With characteristic cunning he interspersed a few sentences in the article which enables him to refer thereto, and to say when in a difficulty, “O! but I never contended that,” &c.—“I never said this was impossible,”—“I always acknowledged the probability,” &c.; and in this way, if *we* did not take care of his reputation and place his deserts on record, he would sail smoothly on like a genuine expediency-monger—one of the mere worldly wise—turning each event to his purpose, and by each pettifogging trick trying to exalt his own character for wisdom.

The number of medical men who continue to denounce mesmerism, and to vilify and abuse mesmerisers, is wonderful. Every town seems to possess “a little man,” who, as Dr. Forbes insinuates, is willing “to become the provincial wonder,” and whose ambition is satisfied if he can perpetuate his name by recording it in the columns of a local newspaper. The last two months have given us some very curious specimens. We take one or two promiscuously, and first on the list we have Mr. Garlick, surgeon, who, from the offensive style of his writing, appears to be a veritable personification of the sweet-scented vegetable, enlightening the inhabitants of Halifax, on the 10th of November, 1846, and concluding in the following strain:—

“The eminent physician, John Elliotson, M.D., who has laboured with all his might to ruin his own prospects and

bring his profession into disrepute. Sorely has he suffered for the part he has played. His position is irretrievably lost—no man now cares what Dr. E. says or does,” &c., &c. Verily, Mr. Garlick, you are “a provincial wonder,” and we are too happy to embalm you in the pages of *The Zoist*.

Then we have a Dr. Elliot,^e of Exeter, taking charge of the education of the inhabitants of the western division of the United Kingdom, and preserving them from the monstrous doctrines of the mesmerisers, by dealing in wholesale abuse and slander. His letters in the *Western Times* are certainly far from creditable to him. On a late occasion, our friend, Mr. Janson, informed him that Dr. Forbes had been converted. On the receipt of this information he is exceedingly indignant, and forthwith writes to Dr. Forbes, who returns an answer, a portion of which we published in a preceding page. Dr. Elliot is so elated (!) that he introduces it to the good people of Exeter, with the following prefatory flourish. “Hear! O Exeter! Dr. Forbes, Physician to the Queen, is NOT a convert to mesmerism, is NOT the ‘QUEEN’S MANIAC,’ but is still an unbeliever, and one of the brightest *ornaments* of the antimesmeric party.” Dr. Forbes we have no doubt says, “save me from my friend;” and we say it is fortunate that our cause does not require “*ornaments*” of such a dazzling lustre.

Sir B. Brodie is engaged in watching over the welfare of the students of St. George’s Hospital, and Dr. Elliot has published, in the Exeter paper, a second edition of his anti-mesmeric opinions. The latter individual is so oppressed by his own exertions and the castigations of Mr. Janson, that he seeks the protection of the surgical baronet, for the same reason that the eastern traveller, overcome by the scorching heat of the tropical sun, courts the friendly shade of some gigantic palm. Sir B. Brodie is not an authority in mesmerism. When he has attempted to perform an operation while the patient is in the mesmeric sleep, then, and not till then, is he qualified to give an opinion as to the possibility of such an occurrence. It is a question of *fact* and not of mere *opinion*. In a recent lecture, reported in the *Medical Gazette*, Sir B. Brodie is reported to have said:—

“In the public journals of the last month I have seen an adver-

^e Late Mr. Elliot, of 16, Romney Terrace, Horseferry Road, a poor neighbourhood behind Westminster Abbey. The practice and druggist’s shop are now carried on by a Mr. Atkinson. Yet all good men will consider that he then stood far, far higher than he does now, after his unwise effusions against a mighty truth and fellow-creatures who never did him harm.—*Zoist*.

tisement relating to the establishment of a mesmeric hospital, in which patients are to be mesmerised, in order that they may be subjected to surgical operations without suffering pain, and the names of several noblemen and gentlemen—one of them a cabinet minister—are to be found in the list of patrons of this new institution. It would be well to inquire, have these individuals been themselves present at such a number of operations performed under what is called the mesmeric influence, as would furnish the data requisite for the adoption of a new principle in pathology? Have they had the assistance of competent persons in the investigation of matters with which they are not themselves familiar? Are they aware that a large proportion of those who undergo surgical operations without being mesmerised *scarcely complain of pain*, whatever they may feel: it is not very uncommon for them to converse at the time as if they were indifferent spectators, and *that it seems to be in the power of almost any one under the influence of excitement or a strong moral determination to sustain bodily suffering without any outward expression of what he suffers.*"

For a complete answer to these extraordinary observations, we must refer our readers to Dr. Elliotson's pamphlet, *Surgical Operations without pain in the Mesmeric State*. The only other comment we shall make, is to refer Sir B. Brodie to the convert Dr. Forbes, who says, "If the statements be corroborated, and if insensibility *can* be produced artificially, surely THE IMMENSE ACQUISITION BOTH TO OPERATOR AND PATIENT IS OBVIOUS AT ONCE. We hesitate not to assert, that the testimony is now of so varied and extensive a kind, so strong, and in a certain proportion of cases so seemingly unexceptionable, as to authorize us, nay, in honesty, to COMPEL us to recommend that an IMMEDIATE AND COMPLETE TRIAL OF THE PRACTICE BE MADE IN SURGICAL CASES."^e

We grieve to be compelled to refer to such sad specimens of professional ignorance and prejudice, and yet this is not a tithe of what we could quote if we had the space, or if it were important for the advancement of mesmerism to do so. Messrs. Wakley and Forbes, ye are the men who have misled your brethren. Ye are the boasted reformers in medicine, and yet how miserably deficient ye have proved yourselves to be in intellectual acumen and the first principles of justice! Gibbon, with grave sarcasm, said, "It is the first care of a reformer to prevent any future reformation." With regard to one branch of medical science, your conduct proves the truth and justice of his remark, and yet, cunning as ye are, truth has been more than a match for your efforts. As regards the amount of cunning displayed, Dr. Forbes has cer-

^e *British and Foreign Medical Review*. October, 1846. p. 485.

tainly beaten his friend, Mr. Wakley. The fugleman has been out-manceuvred by the recruit. Dr. Forbes has announced his conversion in the most jesuitical manner, and if we did not give proof, no person could believe the truth of our statements. Mr. Wakley is attempting the same course, but he fails. We would suggest to him the propriety of holding a consultation with Dr. Forbes—between brothers there can be no occasion to pay the fee—and to propose to him the following problem: “Which is the best way to extricate my journal from its difficulty, and at the same time to avoid compromising its character for consistency?” That Mr. Wakley is now in a transition state—in the “agony of change”—we can give proof. Only *three* years since he addressed the following note to Colonel Davidson, who had forwarded to him a mesmeric communication:^f—

“Mr. Wakley presents his compliments to Col. Davidson, and begs to say that he has carefully read the inclosed communication, but that since he (Mr. W.) is not prepared—for the size of his journal prevents him—to open his pages to *all* correspondents who advocate or deny the proceedings of the ‘mesmerists,’ he cannot make a deviation from a rule which he laid down in the *Lancet* some years since, namely, to *let the questions be discussed elsewhere, without devoting the pages of the Lancet to recording them*. This regulation he has maintained since the time when the imposture of two notorious ‘mesmeric’ patients was manifested in Bedford Square, and made known to the public in that periodical. Mr. Wakley therefore begs leave—complying with the wish in that case made by Col. Davidson—to return to the Colonel his letter of the 3rd instant.

“35, Bedford Square,
“November 22nd, 1843.”

In the meantime, “the pressure from without”^g became

^f On May 10th of last year he wrote as follows in his *Lancet*: “We are much obliged to Mr. W. B. Rogers for the case he has forwarded to us, but *do not mean to publish anything further on mesmerism*, and cannot therefore insert it.” And now he actually feels himself compelled to attack mesmerism *every Saturday*.

On Oct. 27th, 1838, “We cannot undertake to give publicity to any communication on animal magnetism,” were his words.—*Zoist*.

^g This “pressure from without” possesses extraordinary power. It sometimes makes people go mad, according to *their own definition* of insanity. Thus Sir R. Peel, on the 16th of March, 1839, said the man “must be mad who would permit an open trade in corn.” In 1846, Sir R. Peel, according to his own definition, went mad and *proposed the measure*. Lord Melbourne (the House of Lords not being sufficient witness of his decided opinions) “declared before God that he thought the repeal of the corn laws the wildest and maddest proposition he ever heard in his life;” and yet, in due

more and more insupportable, and Mr. Wakley became proportionably outrageous.

“When a fill’d kettle, or a pot,
Is very nearly boiling hot,
’Tis then a bit of flaming stick
Will cause it to boil o’er ;
Effecting that which twenty sticks
Had fail’d to do before.”

Accordingly, “the pages of the *Lancet*” were opened, and Mr. Wakley *did* “make a deviation from a rule which he laid down.” Within a twelvemonth he employed Dr. C. R. Hall to write a series of half-and-half antimesmeric articles, and this movement was announced to the profession in the following style :—

“In consequence of some recent publications, the *Lancet* will contain a complete Critical History of the Rise, Progress, and Mock Marvels of that Hallucinating Fraud, known by the term, Mesmerism.”

As may be supposed, there was a vast deal of nonsense written by Dr. Hall, but he admitted a sufficient number of facts and statements, to enable Mr. Wakley, when he *shortly* commences to record the operations of Dr. Esdaile at Calcutta, and *the favourable report of the Government investigation thereon*, to refer to these articles, and to adopt “the artful dodge” which Dr. Forbes found so pre-eminently useful. However, we shall narrowly watch this unscrupulous individual’s editorial movements and gyrations, and we do not think our pen will refuse to perform its office.

We have already had some very singular specimens of antithesis taken from Dr. Forbes’s journal, and we must now give, for the purpose of shewing the temper and judgment with which Mr. Wakley writes, two specimens of the same character from editorial articles in the *Lancet*. We beg our readers to remark that these specimens are taken from the same page of ONE number only.

“The medical profession the only authority to decide in questions of mesmerism.” — *Lancet*, July 4th, 1846. p. 17.

“The medical profession incompetent to decide disputed medical questions.” — *Lancet*, July 4th, 1846. p. 17.

“Look at the chosen audience and instruments of this mesmeric leader—his allies and assistants,

“It is a singular anomaly, but it is *no less true*, that a court of law, or rather the discussions in

time, he voted for this same “wildest and maddest proposition.” Dr. Forbes has already displayed similar consistency. We are on the tip-toe of expectation for Mr. Wakley’s Jim Crow evolution.

taken from the pert folly of the nobility, the weakest among the literary people, high and low ladies, quack clergymen, itinerant lecturers and exhibiting buffoons."

"This pseudo-science is a thing of the drawing-room, and the gossip of the tea-table, rather than of the study and the laboratory."

"Many of the most distinguished among the fellows marked their *disapproval by their absence from the (Harveian) Oration*. Of these were Dr. Chambers, Dr. Marshall Hall, Sir James Clark, Dr. Lee, Dr. Webster, of Brook Street, and many others."^g

the medical journals which follow a trial are the *only means* we in England possess of deciding disputed medical questions,—‘Is this or that the best test for arsenic?’—‘Is it proper to tie the iliac artery in wounds of its smaller branches?’—‘Are secondary symptoms in the child capable of infecting the nurse?’—would *in vain* have occupied the pages of a journal or the evenings of a society; in the former case probably they would not have been read; in the latter instance *colleagues would have purposely absented themselves*."

"A *trial*, we repeat, is the usual mode of solving any disputed medical question."

After this, we shall not devote further space to notice his more recent attacks upon Dr. Elliotson. Suffice it to say that they occur weekly, and are sometimes of a most disgraceful character. For a recent specimen of refined taste, we beg to refer to the number of the *Lancet* bearing date Dec. 12th, 1846. We really feel pity for the man who is so lost to all sense of decency as to copy into his journal whatever it may please any scoundrel to write. Is this a proof of the respectability of modern medical literature? And is this the well from which professional men are drinking their weekly supply of scientific nourishment? Is the man who chooses to commit his impure thoughts to paper to be permitted to do so with impunity? And is our profession so debased as to sanction the promulgation of such disgusting and filthy trash?

We appeal to professional men to be on their guard. We ask them to investigate the subject of mesmerism—each man for

^g Who Dr. Webster is I know not. But I hear that Sir James Clark is *never seen within the college walls at an Harveian Oration*; indeed, he is not a fellow: that Dr. Marshall Hall has rarely entered the building: that Dr. Chambers has seldom of late been seen at the Harveian Oration: and that Dr. Lee was there. So large a collection of fellows has not of late years been seen at the oration; several came up from the country, and not twenty of those resident in town were absent. The assemblage of fellows, licentiates, and visitors, *exceeded by many times* what was ever witnessed within the memory of my informant: and many of the most distinguished men in the law and church were there. Applause was never before heard before or after an Harveian Oration in the memory of the oldest fellow. But at the end there were distinct rounds of applause; and Dr. Elliotson's health was received after dinner with the same cordiality.—W. C. E.

himself. We say, go to nature; but above all things, avoid the polluting pages of the *Lancet*. We deplore the fact that medical men continue to purchase this periodical, but the tone of society in general is so undignified and so deficient in morality of purpose and high resolves, that we are perhaps in error to expect just now more exalted notions in one particular class. It has been beautifully remarked by a late writer,—“Nowhere is that conduct which is really virtuous regarded with approbation,—nowhere is that which is really vicious condemned: there is no well-directed sensibility; no nice discernment; no correct appreciation of merit; no consistent adherence even to admitted principles: honesty of inquiry is subverted by temptation, or overwhelmed with disgrace and persecution; while unenlightened or criminal acquiescence is fostered and recompensed.”

We feel assured that all will agree with us in the opinion that Dr. Elliotson's career illustrates the truth of the above remarks. Through good report and evil report—in spite of persecutions the most vindictive, and calumnies the most base and degrading, he has laboured on, animated by one feeling only,—the ascertainment of truth. He works not for applause,—his aim is higher and more becoming a rational being. He can say with the great Sydenham, who suffered from similar persecutions, “I find that *it is better to assist mankind than to be commended by them*, and highly conducive to tranquillity of mind; for popular applause is lighter than a feather—a bubble—and less substantial than a dream.”

W. C. ENGLEDDUE.

FINIS.